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ABSTRACT

This study identifies some of the change variables related to the institutionalization of the organizational component of the multiunit elementary school (MUS-E) and begins to identify some of the elements of change implicitly involved in the successful institutionalization of educational change in general. The study is based on data from five questionnaires distributed to a selected national sample of over 2,000 unit teachers, unit leaders, principals, district coordinators, and superintendents in multiunit schools and school districts. Factor analysis was used to identify those change variables that clustered together to form distinct factors affecting institutionalization. The key variables identified related to open and supportive environments, user attitudes, user's cost-benefit decision, the use of open communication channels, supportive services and resources, and flexibility of the change process. Item and multiple regression analysis were used together to identify those global change variables that directly related to the institutionalization of MUS-E. Important variables of change were: the perceived relative advantage, observability, and simplicity of MUS-E; the degree to which the individual was informed, involved, and supported in the change process; the way and degree to which the individual communicated with others; and the way and degree to which the school organization was complex and less formalized. (Author/DN)

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Technical Report No. 319 (Part 1 of 2 Parts)

CHANGE FACTORS RELATED TO THE INSTITUTIONALIZATION OF THE MULTI-UNIT ELEMENTARY SCHOOL

Report from the Project on Organization for Instruction and Administrative Arrangements

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STATEMENT OF FOCUS

Individually Guided Education (IGE) is a new comprehensive system of elementary education. The following components of the IGE system are in varying stages of development and implementation: a new organization for instruction and related administrative arrangements; a model of instructional programing for the individual student; and curriculum components in prereading, reading, mathematics, motivation, and environmental education. The development of other curriculum components, of a system for managing instruction by computer, and of instructional strategies is needed to complete the system. Continuing programmatic research is required to provide a sound knowledge base for the components under development and for improved second generation components. Finally, systematic implementation is essential so that the products will function properly in the IGE schools.

The Center plans and carries out the research, development, and implementation components of its IGE program in this sequence: (1) identify the needs and delimit the component problem area; (2) assess the possible constraints--financial resources and availability of staff; (3) formulate general plans and specific procedures for solving the problems; (4) secure and allocate human and material resources to carry out the plans; (5) provide for effective communication among personnel and efficient management of activities and resources; and (6) evaluate the effectiveness of each activity and its contribution to the total program and correct any difficulties through feedback mechanisms and appropriate management techniques.

A self-renewing system of elementary education is projected in each participating elementary school, i.e., one which is less dependent on external sources for direction and is more responsive to the needs of the children attending each particular school. In the IGE schools, Center-developed and other curriculum products compatible with the Center's instructional programing model will lead to higher morale and job satisfaction among educational personnel. Each developmental product makes its unique contribution to IGE as it is implemented in the schools. The various research components add to the knowledge of Center practitioners, developers, and theorists.

ACKNOWLEDGEMENT

Many individuals contributed to various parts of this study. All are deserving of credit and the author wishes to express gratitude for their contributions.

First, the guidance of Dr. Donald McIsaac, Dr. James Lipham, and Dr. Lloyd Frohreich in helping to limit and focus in on an attainable goal for the study should be acknowledged.

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And, fifth, special thanks should go to my parents who motivated me to pursue my own goals, to my colleague Dr. Oscar Hankinson who motivated me to attend the University

of Wisconsin, and to my husband, Glen Rowse, who actually demonstrated most of the facilitating variables of a change agent as he supported me in working to complete the writing of the study.

If the information in this study is able to generate any greater understanding of change, then credit for the success must be given to all of the mentioned individuals.

TABLE OF CONTENTS

Page

ACKNOWLEDGEMENTS.. iv

LIST OF TABLES.. ix

LIST OF FIGURES... xi

LIST OF APPENDICES......................................xiii

CHAPTER

I. THEORETICAL SUPPORT FOR THE STUDY................ 1

Rationale for the Study........................... 3
Review of Change Literature....................... 5
Summary of Change Literature...................... 84

II. THE PROBLEM AND DESIGN OF THE STUDY............. 91

Purpose of the Study.............................. 92
The Population and Sample......................... 96
Instrumentation and Pilot Study................... 100
Data Gathering Procedure.......................... 115
Scoring, Coding and Transforming of Data.......... 120
Description of the Statistical Analyses Performed on the Data.................................. 123

III. ANALYSES OF THE DATA........................... 129

Tests of the Hypotheses...........................153
Ancillary Questions............................... 161
Extended Analyses of the Data..................... 190
Development of a Model of Change.................. 213

IV. SUMMARY, CONCLUSIONS, AND IMPLICATIONS.......... 219

Summary... 219
Conclusions....................................... 223
Implications...................................... 226

BIBLIOGRAPHY.. 235

APPENDICES.. 249

LIST OF TABLES

TABLE Page

I. Study Population and Sample of School Districts and Schools.............................. 100

II. Organizational Change Questionnaire: Rate of Return for the Pilot Sample by Respondent Group.. 111

III. Pilot Study Unit Teacher Questionnaires: Alpha Coefficients for the Nine Subscales and Total Test.. 114

IV. Organizational Change Questionnaire: Rate of Return for Pilot and Study by Respondent Group. 119

V. Internal Consistency Measures (Alpha Coefficients) for Each of the Organizational Change Questionnaires.............................. 130

VI. Internal Consistency Measures (α Coefficients) for Each of the A Priori Factors on Each of the Organizational Change Questionnaires........... 133

VII. Per Cent of Items on Each Questionnaire Which Were Strong, Medium, or Weak Determinants of the Pre-Assigned Factors and Institutionalization of MUS-E.................................. 138

VIII. Variance Predicted by FACTOR2 Factors for Each Questionnaire................................ 140

IX. Multiple Correlation Coefficient and Coefficient of Determination for the Regression Models for each Questionnaire................. 149

X. DISCRIM1 Significant Findings for Six Descriptive Items.................................. 152

XI. Strength of the Relationship Between a Factor (or its Subfactors) and the Institutionalization of MUS-E................................. 159

XII. Aggregated Assessment of TSTAT and STEPREG1 Item Weights for the Mediating Variables of MUS-E.. 167

TABLE Page

XIII. Aggregated Assessment of TSTAT and STEPREG1 Item Weights for the Mediating Variables of the Process of Change........................ 170

XIV. Aggregated Assessment of TSTAT and STEPREG1 Item Weights for the Mediating Variables of the Agents of Change.......................... 174

XV. Aggregated Assessment of TSTAT and STEPREG1 Item Weights for Intervening Formal Organizational Variables............................ 178

XVI. Aggregated Assessment of TSTAT and STEREG1 Item Weights for Intervening Informal Organizational Variables.................................... 184

XVII. Aggregated Assessment of TSTAT and STEPREG1 Item Weights for Intervening Individual Variables.................................... 186

XVIII. Items on Each Questionnaire Which are Weakly Related (Correlation Coefficient of < .40) to Their Scale and Institutionalization of MUS-E.. 191

XIX. Concept Description of Final Sets of Variables from STEPREG1 for Each Questionnaire........... 205

LIST OF FIGURES

Figure	Page
1. Variables of Change Measured by the Organizational Change Questionnaires	103
2. Variables of Change Measured by the Multiple Choice and Blank Completion Items on the Questionnaires	105
3. Description of Factors Determined by FACTOR2 for Unit Teacher Questionnaire	142

LIST OF APPENDICES

Appendix

A. Population of Multiunit School Districts 251

B. Organizational Change Questionnaires 263

Appendices C, D, E, F, G, H, I, J, K, and L have been omitted from this publication, but are available on microfilm from Memorial Library, University of Wisconsin, Madison, Wisconsin.

M. Implications for the Institutionalization of Planned Change Programs 301

ABSTRACT

Many schools have tried unsuccessfully in the past decades to institutionalize (gain acceptance for and routinization of) needed educational and organizational changes because they have not known how to bring about these changes. This study was concerned with describing the process of bringing about change.

The purpose of this study was to: (1) identify some of the variables and critical clusters of variables of change related to the institutionalization of the organizational component of the multiunit elementary school (MUS-E); and, (2) begin to identify some of the elements of change implicitly involved in the successful institutionalization of educational change in general. The variables selected for study and the factors defined a priori were those most often analyzed by change theorists, systems analysts, and behavioral scientists.

To collect data for the study, five descriptive organizational change questionnaires were designed and distributed to a selected national sample of over 2000 unit teachers, unit leaders, principals, district coor-

dinators and superintendents in multiunit schools and school districts. The reliability estimates for the final questionnaires were between .83 and .95, so, it was concluded that the questionnaires would be useful in describing the variables of change.

To answer the hypotheses and ancillary questions, three basis analyses (an item, a factor, and a multiple regression analysis) were used on the questionnaire data.

The factor analysis identified those change variables which clustered together to form distinct factors affecting institutionalization. It described factors which predicted between 63 and 77 percent of the total variance of institutionalization. The variables identified related to open and supportive environments, user's liking for MUS-E, user's cost-benefit decision, use of open communication channels, supportive services and resources, and flexibility of the change process.

The item analysis and multiple regression were used together to identify those global change variables which directly related to the institutionalization of MUS-E. The item analysis identified individual variables which best related to institutionalization and the multiple regression identified a cluster of variables which best related to institutionalization. Between 54 and 84 percent of the total variance (of each questionnaire) was explained by the combination of variables in each regression model. The variables of change which directly related to the institutionalization of MUS-E were: (1) the perceived relative advantage, observability and simplicity of MUS-E; (2) the degree to which the individual was informed, involved and supported in the change process; (3) the way and degree to which the individual communicated with others; and, (4) the way and degree to which the school organization was complex and less formalized.

Three major conclusions were developed from these findings; all of them describing a model for looking at change. First, it was concluded that the a priori factors and factor analyzed factors (though describing different sets of variables) were both useful in viewing change. The a priori factors provided an organizational theory view of change and the factor analyzed factors provided underlying characteristics describing a supportive change environment. Second, it was concluded that valid information about a change program in any organization could be best obtained if the perspectives of each of the groups in the organization were measured and integrated. Third, it was concluded that measures of change should be diverse and used selectively to obtain the information which a particular group had (rather than should have) about institutionalization. Questions about three factors of change (the process of change, the change itself, and the formal or informal organizational arrangement in which the change was being institutionalized) should be asked of all groups.

CHAPTER I

THEORETICAL SUPPORT FOR THE STUDY

Schools have tried to respond in the past decades to different student needs and increasing societal pressures by changing their organizational structure, curriculum content, or teaching attitudes, behaviors or methods. Despite these attempts, however, relatively few schools have been successful in institutionalizing the desired changes because: (1) they have not known what to change to; and (2) they have not known how to bring about change.

This study was concerned with the second problem - how to bring about change. As yet, there is no synthesized theory on changing. Although organizational theorists, social system analysts, and educational researchers have identified many variables of educational change, they have not been able to identify which variables were related to the institutionalization of change or determine which critical clusters of variables were most important to change. For this reason, educational practitioners still don't know why some innovations are successfully institutionalized and why some are not.

The purpose of this study was to: (1) identify some of the variables and critical clusters of variables of change related to the successful institutionalization of the organizational component of the multiunit elementary school (abbreviated MUS-E); and, (2) begin to identify those elements of change which may be implicitly involved in the successful institutionalization of educational change in general. The variables selected for study were those variables of change which were most often studied by change theorists, system analysts, and behavioral scientists.

The organizational component of the multiunit elementary school (MUS-E) has been selected for this study because it is: (1) a recent and prototypic innovation; (2) a key component of the Individually Guided Education (I.G.E.) system; (3) a prescriptive program and, as such, the institutionalization of its "ideal" elements can be compared across school districts; and, (4) it has been recently implemented in many different school districts across the country. The organizational component of the multiunit elementary school consists of three interrelated structures: (1) an organizational unit for instruction at the building level; (2) a related administrative unit for instructional leadership and coordination at the building level; and, (3) a supportive administrative unit for maintenance and program installation at the central office level. At this time, only the first two of the three organizational elements of the multiunit elementary school will be studied because the third element of the organizational component, the administrative unit at the central office level, is not functioning in most districts.

RATIONALE FOR THE STUDY

The rationale for this study evolved from an application and extension of organizational and social system theory. Organizational and social system theories described the relationships between certain elements of an organization (i.e., size, formalization or centralization) or social system (i.e., external environment, or internal values and beliefs) and organizational performance (i.e., productivity or adaptation) or human performance (i.e., role congruence or individual effectiveness).

This study applied these theories and used the elements identified by change theorists to describe the relationships between the elements of change and the performance of change (i.e., the institutionalization of change). For this study, it was assumed that the elements of change were linearly related to institutionalization and interrelated to each other.

This study was patterned after the Hage and Aiken studies in organizational theory and the Getzels and Guba studies in social system theory which analyzed varied elements of an organization or social system together to see if the combination of elements related differently to organizational or human performance than the elements alone. This study studied the combination of change elements as they related to successful institutionalization of MUS-E.

A problem in both organizational and social system theory has been the definition and measurement of organizational and human performance. This has also been a problem in the study of change theory. For this study, the institutionalization of a change (MUS-E) is described as the extent to which the individual respondents thought that the performance objectives of MUS-E had been met in their school or school district two years after implementation had begun. The performance objectives of MUS-E were measured in relation to the relative advantage of MUS-E in (1) leading to effective instructional programming; (2) meeting individual learning needs; (3) leading to effective teaching and administrative roles; (4) providing for the learning of basic skills; and, (5) leading to children liking school. In this study, each element of change was analyzed in relation to the degree of institutionalization of MUS-E.

Since it is thought that MUS-E incorporated many of the general elements and characteristics of change programs (to be described in detail in the next section), the change characteristics extracted from a review of general change literature were directly used and related to a study of MUS-E as a program of change. In Chapter III, the elements of change found to be related to the institutionalization of MUS-E were applied to the development of a general model of change.

REVIEW OF CHANGE LITERATURE

The most cited variables of change will be presented in this section. They will form the theoretical structure for this study. Many change theorists have pointed out the need for developing a coherent theory of change. Guba[1] for example, believed that one must understand the process of innovation, the nature of innovation itself, the nature of adapting systems, and the nature of the agency or mechanism carrying out the innovation before one could successfully institutionalize educational innovations. Chin[2], likewise, believed that different users should have a different procedure for affecting change, and, that the selection of a procedural strategy ought to depend on the nature of the problem, the nature of the change, and the process of changing. Schmuck and Miles[3] believed that school improvement efforts failed because they were piecemeal and did not focus on the systematic features of schools which either enhanced or retarded innovation. And, Corwin[4] after his experience with the Teacher Corps thought that it was not very useful to evaluate an organization's effectiveness in change without systematically looking at the organization's history and social context.

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[1] Egon G. Guba, "Diffusion of Innovation," EDUCATIONAL LEADERSHIP, XXV (January 1968), pp. 292-295.

[2] Robert Chin, "Basic Strategies and Procedures in Effecting Change," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION. Edgar L. Morphet and Charles O. Ryan, editors. New York: Citation Press, 1961, p. 53.

Thus far, only a few change theorists have been able to identify specific relationships between the variables of change and the institutionalization of change. Although there have been many different field studies of innovation, most have focused (as have the economists who have done most of the innovation studies) on the implications of introducing new developments, not on the process of implementation itself.[5] The most successful educational change theorists have been those who differentiated between the kinds of change and the rate of diffusion (adoption) of the change. For instance, Trump and Georgiades[6] found that changes in a school's formal organizational structure were least difficult to bring about while changes in the professional responsibility and role of the teacher were most difficult to bring about. Carlson[7] found that changes in basic or supplementary curricula diffused at differing rates. For example, he found that foreign language instruction in elementary schools in Pennsylvania and West Virginia, first accepted in 1952, was practiced by 37 per cent of the schools in those states by 1963; while modern math instruction, first accepted in those schools in 1958, was practiced by 75 per cent of those schools by 1963. Pincus[8] found that innovations like PSSC, language laboratories, and new math spread rapidly while junior high schools, kindergarten and driver training spread more slowly; ungraded classes, open schools, and decentralization of decision-making from district to school spread very slowly; and, use of vouchers, abolition of teacher tenure, and abolition of formal schooling did not spread at all.

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[3] Arthur Blumberg, "The School Organization as the Target of Change," EDUCATIONAL TECHNOLOGY, XII, Number 10 (October 1972), p. 9.

[4] Ronald G. Corwin, "Strategies of Organizational Survival: The Case of a National Program for Educational Reform," THE JOURNAL OF APPLIED BEHAVIORAL SCIENCE, Volume 8, Number 4 (July/August 1972), p. 470.

[5] Kenneth E. Knight, "A Descriptive Model of the IntraFirm Innovative Process," JOURNAL OF BUSINESS, Volume 40, Number 4 (October 1967), p. 479.

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[6] Lloyd Trump and William Georgiades, "Which Elements of School Programs are Easier to Change and Which are Most Difficult to Change," NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS BULLETIN, Volume 55, Number 335 (May 1971), pp. 58, 65.

[7] Richard O. Carlson, ADOPTION OF EDUCATIONAL INNOVATIONS. Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1965, p. 67.

[8] John Pincus, "Incentives for Innovation in the Public Schools," REVIEW OF EDUCATIONAL RESEARCH, Volume 44, Number 13 (Winter 1974), pp. 116-117.

A few theorists have tried to explain this discrepancy in rate of diffusion and kind of change. Pincus[9], for example, believed that this discrepancy could be explained by the fact that schools tended to adopt innovations which promoted the school's self image by seeming up-to-date (i.e., new curricula), efficient (i.e., computer assisted instruction), professional (i.e., in-service programs), or responsive to the needs of the community (i.e., citizens advisory committees), but failed to adopt innovations which seemed to alter the schools' basic purpose or organization.

Wolf and Fiorino[10], from their study of newly adopted innovations, thought that innovations calling for minimum program alteration and behavior modification were more likely to be adopted than those innovations calling for alteration of the status quo. Woods[11] thought that the most successful innovations were those which increased the autonomy and initiative of the users. Although other theorists have studied the effects of specific variables (i.e., wealth, pupil enrollment, origin of the superintendent, etc.) on the institutionalization of change, the relationships which have been found were not very strong.

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[9] Ibid., p. 122.

[10] William C. Wolf, Jr. and A. John Fiorino, "Some Perspectives of Educational Change," THE EDUCATIONAL FORUM, Volume 38 (November 1973), pp. 81-82.

[11] Thomas E. Woods, THE ADMINISTRATION OF EDUCATIONAL INNOVATIONS. Eugene, Oregon: Bureau of Educational Research, School of Education, University of Oregon, 1967, p. 54. (As cited by Ronald G. Havelock, A GUIDE TO INNOVATION IN EDUCATION. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, 1971, p. 117.)

Despite the inconclusive findings about the important variables related to the institutionalization of a change program, most change theorists believed that there were certain specific elements or descriptors of change which needed to be looked at in setting up a successful change program. Five elements (descriptors) of change: (1) types of change; (2) the processes of changing; (3) agents of change; (4) mediating variables; and, (5) intervening variables, were studied in this research. The first three elements of change were descriptive of change itself. The last two elements were attributes of the descriptors. The most critical variables in each category, those most often studied by change theorists, will be discussed. Unless otherwise identified, the authors who are cited will all have studied educational changes.

Types of Change -- Change theorists have identified two, three, four, or five kinds of change. They have viewed change in many different ways - in terms of what was changed, how much was changed, and who was affected by the change.

Leavitt[12] thought that there were three basic types of change in industry - structural change, technological change, and humanistic change. Knight[13] thought that there were four basic types of innovations in industry - one related to the product or service, one related to the production or process, one related to the organizational structure, and one related to people.

Chin[14] thought that there were five basic types of change, all related to the amount of change incurred in innovating. From low to high, he thought there were substitutions (i.e., exchanging one text for another), alterations (i.e., lengthening the school day), variations (i.e., moving a class to another classroom), restructurings (i.e., adopting team teaching), or value reorientations (i.e., replacing teachers with computer assisted instruction).

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[12] Harold J. Leavitt, "Applied Organizational Change in Industry: Structural, Technological, and Humanistic approaches," INTERDISCIPLINARY FOUNDATIONS OF SUPERVISION. Lanore A. Netzer, Glen G. Eye, et al., editors. Boston: Allyn and Bacon, Inc., 1970, p. 45.

[13] Knight, p. 480.

[14] Robert Chin, MODELS AND IDEAS ABOUT CHANGING. Paper presented at the Symposium on Identifying Techniques and Principles for Gaining Acceptance of Research Results of Use of Newer Media in Education; Lincoln, Nebraska, University of Nebraska, 1973. (As cited by Egon G. Guba, "Diffusion of Innovation," EDUCATIONAL LEADERSHIP, Volume 25, Number 4 (January 1968), pp. 294-295.)

Saville[15] believed that there were four categories of change - new technical advances, new processes, new goals, and new curriculum advances. Unruh and Turner[16] believed that there were two categories of change - one affecting the curriculum and one affecting the organization. Miller[17] belived that there were three kinds of change - one affecting the organization, one affecting the program, and one affecting the methodology.

Processes of Changing -- Change theorists have identified five models or processes of changing. At one time or another, each of these models has been and/or still is applied. In general, however, there has been a progression of models used, as each successive model has profited by the weaknesses and mistakes of its predecessors. Many of the change approaches in the past have erred by being directed towards a single change, thus leading towards the thinking of change as a product introduction rather than a process of adaptation[18]. Many also have erred in treating the implementation of innovations as a singular event, not a process involving an interrelated set of shifting conditions[19]. The more recently developed processes of change have sought to correct these weaknesses.

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[15] Anthony Saville, "Topography of Change," THE CLEARING HOUSE, XCII (January 1968), pp. 271-273.

[16] Adolph Unruh and Harold E. Turner, SUPERVISION FOR CHANGE AND INNOVATION. Boston: Houghton-Mifflin Company, 1970, p. 294.

[17] Richard I. Miller, "Some Observations and Suggestions," PERSPECTIVES ON EDUCATIONAL CHANGE. Richard I. Miller, editor. New York: Appleton-Century-Crofts, 1967, p. 369.

The traditional model of changing, expounded by Jung and Lippitt[20], was a problem-solving model of changing. Essentially, this model was concerned with the process of change which went on inside the user. It was an action oriented process as it was usually directed by individual users who initially identified a need for change and correspondingly undertook to diagnose and develop a solution to the needed change themselves[21]. It was patterned after the decision making model defined by Barnard in 1938 in his classic work THE FUNCTIONING OF AN EXECUTIVE (Cambridge, Harvard University Press) and it was adopted by social psychologists in the 1950's. This model of changing has been usually applied to the problems of an individual school unit or individual classroom.

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[18] Robert B. Howsam, Effecting Needed Changes in Education," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., p. 72.

[19] E. Ginzberg and E. Reilly, EFFECTIVE CHANGE IN LARGE ORGANIZATIONS. New York: Columbia University Press, 1957. (As cited by Neal Gross, Joseph Giacquinta, and Marilyn Bernstein, IMPLEMENTING ORGANIZATIONAL INNOVATIONS: A SOCIOLOGICAL ANALYSIS OF PLANNED EDUCATIONAL CHANGE. New York: Basic Books, 1971, p. 30.)

[20] Charles Jung and Ronald Lippitt, "The Study of Change as a Concept in Research Utilization," THEORY INTO PRACTICE, V (February 1966), pp. 25-29.

[21] Ronald G. Havelock, PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE. Ann Arbor, Michigan: Institute for Social Research, 1969, Chapter 10, p. 29.

Jung and Lippitt[22] identified six common phases of Barnard's process model: (1) identifying the problem; (2) diagnosing the problem; (3) retrieving related knowledge and discussing its implications for overcoming the problems; (4) forming alternatives to action; (5) testing the feasibility of the alternatives; and, (6) adopting and implementing the selected alternative. Henrie and Bailey[23] identified six different phases of Barnard's process model: (1) clarifying the goals; (2) defining the objectives; (3) defining the mission and analyzing the tasks; (4) establishing the sequence of the tasks; (5) establishing the management system; and, (6) setting up the evaluative mechanisms. Havelock[24] described six steps of Barnard's model: (1) translating a need into a problem; (2) diagnosing the problem; (3) searching and obtaining information about solutions to the problem; (4) adopting the solution to the situation; (5) trying out the solution; and, (6) evaluating the solution in terms of the user's need satisfaction. With this process, a "ripple effect of change" was established. Solutions trickled from individual user to individual user as users seeking a solution to their problems could initiate their own solutions or adopt others judged to be successful[25]. Action research, human relations training, T-group laboratories, and consultant firms are examples of the kinds of strategies, programs and organizations which utilize Barnard's process model of change[26].

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[22] Jung and Lippitt, pp. 25-29.

[23] Samuel N. Henrie and Higgins D. Bailey, "Planning Carefully or Muddling Through: An Educator's Choice," JOURNAL OF SECONDARY EDUCATION, XLIII (December 1968), pp. 349-352.

[24] Havelock, PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE, Chapter 9, p. 38.

The second process model of change, the research and development process, developed because many theorists and practitioners began to see that schools and school districts had common, not singularly isolated problems. This second process model is a formal and identifiable process approach to change and is the most commonly applied process model today. It was initially accepted because many school personnel thought it had more promise for finding optimal solutions to problems than did the risk-avoiding problem-solving approach. School personnel thought that large scale carefully planned research and development efforts would be more effective in gaining adoption than would the more modest individual user efforts[27].

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[25] A STUDY OF INNOVATION AND CHANGE IN EDUCATION. An Action-Research Project supported by the Charles F. Kettering Foundation and Colgate University. Hamilton, New York: Office of Educational Research, Colgate University, 1971.

[26] Per Dalin, "Planning for Change in Education: Qualitative Aspects of Educational Planning," INTERNATIONAL REVIEW OF EDUCATION, Volume 15, Number 4 (1970), p. 438.

Traditionally, this process looked at change from the point of view of the originator (developer) of the innovation. The focus was on the development and design of a potential solution to a problem presumed to exist[28]. At first, this process of change had three phases - one of research, one of development, and one of diffusion. In the latter part of the sixties, however, theorists added a new phase to this process model because it became apparent that the diffused changes were not being institutionalized. First, since most research efforts had gone into the first two phases, the research findings were not being promoted. Second, since many educators did not view the scientific method as significant or related to their work, they placed a low priority on the performance of research[29].

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[27] Pincus, pp. 123-124.

[28] Havelock, PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE, Chapter 10, p. 29.

Hencley[30] defined this new research model as one of research, development, diffusion, and adoption of change. Guba[31] defined it as one of trial, installation, and institutionalization. In time, especially with the passage of the elementary and secondary education acts (ESEA) of 1965 , other proponents of this process model have added a few qualifiers to each of the phases. Havelock[32], for example, thought that: (1) there should be a rational sequence in the evaluation and application of an innovation; (2) research, development, production, and packaging of a program change should occur before dissemination of the program change; (3) there should be planning on a massive scale; (4) there should be a rational division and coordination of labor in accordance with the planning phase; and, (5) the proponents of the innovation should be willing to accept high initial development costs prior to any dissemination activity. In addition, he thought that a passive but rational consumer population should accept and adopt a proposed innovation if it was offered in the right place, in the right form, and, at the right time. Research and development centers, demonstration centers, regional educational laboratories, and experimental schools are examples of the kinds of programs and organizations which utilize this process model of change.

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[29] Roland J. Pellegrin, AN ANALYSIS OF SOURCES AND PROCESSES OF INNOVATION IN EDUCATION. A paper presented at the Conference on Educational Change sponsored by the Demonstration Project for Gifted Youth and the U.S. Office of Education. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1966, p. 32. (As cited by Havelock, PLANNING INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE, Chapter 4, p. 29.)

[30] Stephen P. Hencley, "Supplementary Statement," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., p. 57.

[31] Egon G. Guba, "The Basis for Educational Improvement." (Paper presented to the Kettering Foundation, U.S. Office of Education, National Seminar in Innovation, Honolulu, Hawaii, July 1971.)

[32] Ronald G. Havelock, "Experimental School Networks, Theory and Reality," JOURNAL OF SECONDARY EDUCATION, Volume 46, Number 4 (April 1971), p. 179.

Since the linear, sequential relationships of the research, development, diffusion and adoption phases were not always found to hold in the real world[33] and since there was contined dissatisfaction with the utility and diffusion of research findings, a third model, a social interaction model, was developed. In general, proponents of this model disagreed with the assumptions underlying the research model. They focused on the user of the change and his environment rather than on the development of change products. They believed that the user of change was influenced by informal, direct, peer contact, group membership, and opinion leadership in his own organization[34].

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[33] David L. Clark and Egon G. Guba, "A Re-examination of a Test of the Research and Development Model of Change," EDUCATIONAL ADMINISTRATION QUARTERLY, Volume VIII, Number 3 (Autumn 1972), pp. 99-100.

Specifically, House, Kerins and Steele[35], believed that the user population was not passive and could not be shaped by the process of dissemination itself. Instead, they argued that innovations were institutionalized in a school because of the workings of the social interaction network within the school. Hencley[36] believed that institutional and organizational groups, should be viewed by change theorists as the media, the targets, and the agents of change. Chin[37] believed that the most important variables in this process of changing were those variables describing the informal and formal structural arrangements of a school and those variables describing the kinds of actions undertaken by the change agent to improve and shape teachers' attitudes and feelings about change. Havelock[38] believed that the most important elements of this model were the amount of emphasis placed on the diffusion of messages and the two-way interchange of information/knowledge between potential users of the change.

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[34] Ronald G. Havelock and Mary C. Havelock, TRAINING FOR CHANGE AGENTS. Ann Arbor, Michigan: Institute for Social Research, University of Michigan, 1973, p. 18.

[35] Ernest R. House, Thomas Kerins, and Joe M. Steele, "A Test of the Research and Development Model of Change," EDUCATIONAL ADMINISTRATION QUARTERLY, Volume 8, Number 1 (Winter 1972), p. 12.

[36] Hencley, p. 62.

[37] Chin, pp. 48-50.

Havelock[39] characterized the five phases of this model as: (1) Awareness of an innovation; (2) interest in an innovation; (3) evaluation of an innovation's appropriateness; (4) trial of an innovation; and, (5) adoption of an innovation. Gross, Giacquinta, and Bernstein[40] characterized the six steps of this model as: (1) awareness; (2) interest; (3) trial; (4) evaluation; (5) adoption; and, (6) discontinuence. Management training programs, school district in-service and workshop training programs, and university feedback and system planning programs are examples of the programs which utilize this process model of change.

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[38] Havelock, PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE, Chapter 2, pp. 42-43.

[39] Ibid., Chapter 9, p. 38.

[40] Neal Gross, Joseph Giacquinta, Marilyn Bernstein, IMPLEMENTING ORGANIZATIONAL INNOVATIONS: A SOCIOLOGICAL ANALYSIS OF PLANNED EDUCATIONAL CHANGE. New York: Basic Books, 1971, p. 21.

The fourth model of changing, recently defined by Havelock in 1970[41], was that of a linkage process model of changing. This model incorporated some of the phases and strategies of the other three models. Because it synthesized the phases and strategies of the other models, Havelock thought that it had the best potential of all the model for success in the institutionalization of change. This model focused initially on the user of the change as a problem solver, then subsequently focused on linking the user to outside resources and setting up reciprocal relations with each[42].

Havelock[43] thought that there were four important phases in this model of change. The first phase incorporated the phases of the problem-solving process. As such, new knowledge relevant to the problem to be considered was sought and retrieved. The second phase incorporated the phases of the research process. As such, educational researchers (as in the research model) carried on the processes of research, development, and communication of their findings to the school district. The third phase incorporated the phases of the social interaction process. As such, attention was focused on the relationships and communication system established between the researcher, developer, practitioner, and consumer. The fourth and final phase incorporated the phases of the linkage process model itself. Each separate role holder was helped in this phase to see what resources were available to him within the organization and what the other role holders were doing in their part of the process of changing. The League of Cooperating Schools (LCS) in California has utilized this process model of changing in the development of its change program[44].

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[41] Havelock, "Experimental School Networks, Theory and Reality," _op. cit._, p. 183.

[42] Havelock, TRAINING FOR CHANGE AGENTS, pp. 23-25.

[43] Havelock, "Experimental School Networks, Theory and Reality," _op. cit._, p. 184.

The final model of change, the organizational development (OD) model, has recently received much attention and support from educational change theorists such as Schmuck and Miles[45]. Adapted from the business and government OD models of the 1950's, the educational OD model formally incorporated and synthesized the theories of the other processes.

Primarily, the OD model viewed schools as organizations and innovations as change in the organization of the school.

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[44] Ibid.

[45] Schmuck, Richard A. and Miles, Mathew B. ORGANIZATION DEVELOPMENT IN SCHOOLS. Palo Alto, California: National Press Books, 1971.

In general, OD proponents thought that change in education could occur if a school's organizational conservatism and pathology were overcome[46]. These theorists viewed organizational change as change in the roles, authority structure, division of labor, and goals of the organization[47].

Specifically, Schmuck[48] thought that the aims of OD were to: (1) improve the ability of subsystems of a school district to improve or change themselves; (2) increase the receptiveness of responsiveness of school organizations to their environment; (3) develop a capability of receiving valid information, acting on it,and using their own resources to do things in a new way; (4) develop an open organization with decisions made by those individuals with information, with sensing and evaluation mechanisms, and with open communication and contact between organizational members; (5) help the subsystem work out goals so that they were compatible with the needs or orientations of others; and, (6) improve the use of internal and external resources so as to augment the communication of ideas. Stewart[49] thought that the aim of OD was to develop a more open, trusting, collaborative, self anticipating organization which would be more willing to take risks and use more creative imaginative approaches to organizational problems. Feitler and Lippitt[50] thought that the aim of OD was to develop a problem solving, collaborative environment so that each user became a change agent.

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[46] _Ibid_., pp. 1-2.

[47] Gross, et. al., p. 15.

[48] Richard A. Schmuck, HANDBOOK OF ORGANIZATIONAL DEVELOPMENT IN SCHOOLS. Center for the Advanced Study of Educational Administration, Eugene, Oregon: National Press Books, 1972, pp. 3-5,8.

Most theorists defined OD as a planned and systematic problem solving process which applied behavioral science research findings, change models, and statistical techniques for system improvement[51]. Usually, this process was directed by an "outside" consultant who through planned "interventions" worked closely with the staff to train them to deal with their own organizational problems. The role of the consultant was to: (1) diagnose the situation and gain consensus with the administrator; (2) convince the organizational members that OD is what it needed; (3) develop a collaborative relationship with and between users; and, (4) deal with the anxiety of the users by removing their fear of insecurity or loss in authority[52]. The consortium of schools, the proposed center - sattelite model, the cooperative project for educational development, and the proposed School District Renewal sites are examples of the kinds of programs and organizations which apply this process model of change.

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[49] Stewart, "What is Organizational Development and How Does it Apply to Schools," EDUCATION CANADA, Volume 13, Number 2 (June 1973), p. 20.

[50] Fred C. Feitler and Lawrence L. Lippitt, "A Multi-district Organizational Development Effect," EDUCATIONAL TECHNOLOGY, Volume XII, Number 10 (October 1972), pp. 34-38.

[51] Schmuck and Miles, p. 3.

[51] Paul C. Buchanan, "Organizational Development as a Process Strategy for Change," EDUCATIONAL TECHNOLOGY, Volume XII, Number 10 (October 1972), p. 10.

Agents of Change -- Another important element of change identified in the literature is the role assumed by the agent of change. In generic terms, agents of change are important to the change effort because they are the doers, the innovators, the supporters and the catalysts of change programs. In these positions, they are involved with communication processes, group dynamics, information retrieval, action research, evaluation of programs, outside support groups (i.e., community organizations), and direction of co-workers[53]. As catalysts they sought to prod and pressure the system to be less complacent. As innovators they sought to help define and develop ideas about what the change was to be. As doers (process helpers) they sought to involve the organization in problem solving and implementing change programs. As supporters they sought to bring needed people together and help users find and use resources available in and outside of the system[54]. In specific terms, agents of change are viewed as either technical consultants, process consultants, educational researchers, or school administrators.

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[52] Samuel Goldman and William Moynihan, "Strategies for Consultant - Client Interface," EDUCATIONAL TECHNOLOGY, Volume XII, Number 10 (October 1972), pp. 28-29.

[53] Lesie Chamberlain, "Educational Change: Where Does One Start?," CLEARING HOUSE, Volume 47, Number 5 (January 1973), p. 265.

If the agent of change is seen as a technical consultant, his role is viewed as similar to that of a project manager. Blanchard and Cook[55] thought that the role of a project manager was one of planning and controlling the process of change. They thought that the technical consultant should be involved in managing the time, cost, and performance of the client system. And, Delbecq and Van De Ven[56] thought that the project manager, (in non-profit organizations) as a technical administrator, should be concerned with problem solving, project implementation, and project control.

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[54] Havelock, TRAINING FOR CHANGE AGENTS, pp. 60-62.

[55] Gary F. Blanchard and Desmond L. Cook, "Project Management and Educational Change," EDUCATIONAL TECHNOLOGY, Volume XI, Number 10 (October 1971), pp. 51-53.

[56] Andre Delbecq and Andrew Van De Ven, "Organizational Roles in Program Management." (From READINGS presented to Business 719 students, Spring Semester, 1972, pp. 20-24.)

If the agent of change is seen as a process consultant, his role is viewed as similar to that of an organizational facilitator. Duncan[57] believed that the role of process consultant is to work with the organizational members to help them interpret feedback and learn to perceive, understand, and act on events. Goldman and Moynihan[58] thought that the role of the process consultant is to: (1) diagnose the situation and achieve consensus with the administrator about their role; (2) convince the target group that the change program is relevant to what they need; (3) develop collaborative relations with the organizational members; and, (4) deal with user anxiety by establishing trust and overcoming insecurity and fear about the effects of the change. Havelock[59] thought that the role of the process consultant is to be non-directive seeking to involve the users of the organization themselves in becoming involved in the process of change.

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[57] Robert B. Duncan, CRITERIA FOR THE TYPE OF CHANGE AGENT IN CHANGING EDUCATIONAL ORGANIZATIONS. (Paper presented at the American Educational Research Association's Annual Meeting in Chicago, Illinois, April 7, 1972, p. 6.)

[58] Goldman and Moynihan, pp. 28-29.

[59] Havelock, TRAINING FOR CHANGE AGENTS, p. 8.

Schmuck and Blumberg[60] thought that the role of the process consultant is to establish credibility for the change program. Cooke and Zaltman[61] thought that the role of the process consultant is to function as a communication linker between the varied social groups in a system.

If the agent of change is seen as an educational researcher, his role is viewed as similar to that of a project scientist. Hayman[62] thought that an educational researcher should be involved in securing relevant information of the characteristics of the school system and should be involved in determining the effects of change deliberately introduced into the school system. Stake[63] thought that the role of an educational researcher is to seek generalizations about educational practices and to make judgments about educational programs. In this process, the educational researcher used behavioral objectives and systematically gathered data. Foster[64] thought that the role of the educational researcher is to be active in the process of change by giving teacher directions about the way to arrive at expected changes.

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[60] Richard Schmuck and Arthur Blumberg, "Barriers to Organizational Development Training for Schools," EDUCATIONAL TECHNOLOGY, Volume XII, Number 10 (October 1972), p. 33.

[61] Robert A. Cooke and Gerald Zaltman, CHANGE AGENTS AND SOCIAL SYSTEM CHANGE. (Paper presented at the American Educational Research Association's Annual Meeting in Chicago, Illinois, April 7, 1972, p. 3.)

[62] John Hayman, A PLAN FOR REORGANIZATION OF THE RESEARCH AND EVALUATION OPERATIONS WITHIN THE SCHOOL DISTRICT. (Paper presented to the Office of Research Staff, Philadelphia School District, February 1967, pp. 3-8.)

[63] Robert Stake, "The Countenance of Educational Evaluation," TEACHER'S COLLEGE RECORD, Volume 68, Number 7, April 1967, pp. 530-536.

If the agent of change is seen as an educational administrator, his role is viewed as similar to that of an instructional leader. Bennis[65] believed that this role is one of providing consultative and psychological support for the client system during the transactional phases of change; and one of encouraging the clients to test out their competencies, cooperate with each other, and experiment with the new principles of the program change. Davis[66] believed that the role of the administrator is to help provide prestige for the experimentation of the client system and to help develop a feeling of belonging and commitment to the over-all process of change. Annese[67] believed that the role of the administrator is to encourage the development of democratic interpersonal behavior. Cunningham[68] believed that the role of the administrator is to manipulate the professional and organizational environment. Schmuck and Blumberg[69] believed that the role of the administrator is, as an organizational manager, to be concerned with the scheduling of meetings and obtaining time for meetings about problems. Cooke and Zaltman[70] believed that the role of the administrator is to use the theory and methods of social, behavioral and management science to strengthen the functions of the organization.

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[64] Richard L. Foster, "The Search for Change," EDUCATIONAL LEADERSHIP, Volume 24, Number 4 (January 1968), pp. 288-289.

[65] Warren G. Bennis, CHANGING ORGANIZATIONS. New York: McGraw-Hill Book Company, 1966, p. 176.

[66] J. Clark Davis, "Supplementary Statement," PLANNING AND EFFECTING THE NEEDED CHANGES IN EDUCATION, op. cit., p. 35.

[67] Louis E. Annese, "The Principal as a Change Agent," THE CLEARING HOUSE, XLV (January 1971), pp. 273-277.

Mediating and Intervening Variables -- Thus far, three specific descriptors of change itself have been described. There are, however, two additional sets of variables (mediating and intervening variables) which also affect the degree of institutionalization of a change program.

Mediating Variables -- Mediating variables are those variables which can be introduced, developed, manipulated, or controlled by the agents of change. They are causal or "stimulus" variables which are thought to be capable of affecting, positively or negatively, the successful institutionalization of change. Essentially, they describe what can be done to the change program, the process of changing, and the roles of the agents of change to maximize the successful institutionalization of change. There are essentially three types of these variables: (1) those making up the attributes of the types of change; (2) those making up the attributes of the processes of change; and, (3) those making up the attributes of the agents of change. If critical clusters of these variables can be identified and categorized by this study, strategies for positively affecting the institutionalization of change can be developed.

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[68] Luvern L. Cunningham, "Viewing Change in School Organizations," ADMINISTRATOR'S NOTEBOOK, Volume XX, Number 1 (September 1962), p. 3.

[69] Schmuck and Blumberg, pp. 31,33.

[70] Cooke and Zaltman, p. 4.

The first type of mediating variable can be viewed as specific attributes of the types of change. As attributes of a change, they affect the perceived quality of the introduced change.

Many theorists have identified clusters of these variables which were believed to affect the institutionalization of change. For example, Rogers and Shoemaker[71] thought that there were at least five attributes of an introduced change which affected its rate of diffusion. They thought that educational changes which were perceived as: (1) more advantageous to the user than what was being used at the moment; (2) less complex; (3) more compatible to the users' value system; (4) more open for trial; and, (5) more able to have observable results, tended to be adopted more quickly than those changes which were not seen as possessing those attributes. Lippitt[72] found that innovations which: (1) were perceived as being relevant to the needs of the students; (2) were able to be undertaken gradually; (3) had built in evaluative techniques; and, (4) could be duplicated easily, tended to facilitate the successful institutionalization of change. Zander[73] found that changes tend to be resisted if they were not clearly understood or if they ignored well-established institutions in the schools. Moore and Migata[74] thought that if a change program was credible with: (1) a visible advantage over the present program; (2) a simplistic and divisible design; and, (3) measurable objectives, it could be more readily accepted. Hill[75] and Harmes[76] thought that a change program was likely to be accepted if it had relatively few perceived side effects and required only a moderate amount of extra energy and effort. Purdy[77] thought that the: (1) lack of risk money; (2) the lack of thorough research; (3) the existence of legal obstructions; (4) the lack of evaluation of the program; and, (5) the lack of clear understanding of the program, all hindered the success of an innovation. And, Miles[78] thought that before any innovation could have a high adoption rate among users it would have to: (1) be of proven quality and value; (2) be easily demonstratable; (3) be of reasonable cost; (4) be accessible to users; and, (5) have information available to users.

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[71] Everett M. Rogers and F. Loyd Shoemaker, COMMUNICATION OF INNOVATIONS: A CROSS-CULTURAL APPROACH. New York: Free Press, 1971, pp. 22-23.

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[72] Ronald Lippitt, "The Teacher as Innovator, Seeker, and Sharer of New Practices," PERSPECTIVES ON EDUCATIONAL CHANGE, op. cit., p. 310.

[73] Alvin Zander, "Resistance to Change - Its Analysis and Prevention," INTERDISCIPLINARY FOUNDATIONS OF SUPERVISION, op. cit., pp. 92-93.

[74] Samuel Moore and Kiyoto Mizata, "Innovation Diffusion: A Study in Credibility," EDUCATIONAL FORUM, XXXIII (January 1969), pp. 181-185.

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[75] Charles H. Hill, "Teachers as Change Agents," THE CLEARING HOUSE, Volume 45, Number 7 (March 1971), p. 425.

[76] H. M. Harmes, "Improvement in Education: Criteria for Change," EDUCATIONAL TECHNOLOGY, X (November 1970), pp. 46-50.

[77] Ralph Purdy, "The Public and Innovation," EDUCATIONAL LEADERSHIP, Volume 25, Number 4 (January 1968), pp. 296-299.

[78] Mathew B. Miles, INNOVATION IN EDUCATION. New York: Bureau of Publications, Teachers College, Columbia University, 1964, p. 22

Other theorists have only focused on single attributes of a change. For example, Watson and Glaser[79] believed that if a user saw a change as coming from outside the system, he might only give it his half-hearted support. Evan and Black[80] in industrial organizations, Minz[81] in community organizations, and Pellegrin[82] in educational organizations found that innovative programs must be based on the felt needs of the target system in order to be successfully implemented. Havelock[83] found that innovations which could be adopted on a limited basis were more readily diffused than those which could not. Meyerson and Katz[84] found that some innovations (fads) gained acceptance because they did not change the social structure of the patterns of communication and interaction of the organizations in which they were introduced. Lin, Leu, Rogers and Schwartz[85] found that if teachers thought that they knew a great deal about the innovation, they were more likely to accept it. Minz[86], in community organizations, found that an innovation was more likely to be implemented successfully if it was perceived as bringing practical benefits to the organization. Fliegel and Kivlin[87] from their study of non-profit organizations found that if individual users perceived the innovation as reliable, they would be more likely to accept it.

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[79] Goodwin Watson and Edward M. Glaser, "What we Have Learned About Planning for Change," MANAGEMENT REVIEW (November 1965), p. 36. (As cited by Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 141.)

[80] William M. Evan and Guy Black, "Innovations in Business Organizations: Some Factors Associated with Success or Failure of Staff Proposals," JOURNAL OF BUSINESS, Volume 40 (1967), p. 524.

[81] B. Minz, "A Conceptual Model for Analyzing Community Development Programs," SOCIAL ACTION, Volume 20, Number 1 (January 1970), pp. 49-58.

[82] Pellegrin, p. 32. (As cited by Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 4, p. 7.)

[83] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 8, p. 40.

[84] Rolf Meyerson and Elihu Katz, "Notes on a Natural History of Fads," AMERICAN JOURNAL OF SOCIOLOGY, Volume 62 (1957), pp. 596-600.

The second type of mediating variables can be viewed as specific attributes of the processes of changing.

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[85] Nan Lin, D. J. Leu, E. Rogers, and D. F. Schwartz, THE DIFFUSION OF AN INNOVATION IN THREE MICHIGAN HIGH SCHOOLS: INSTITUTION BUILDING THROUGH CHANGE. Michigan: Institute for International Studies in Education, Michigan State University, December 1966. (As cited by Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 4, p. 30.)

[86] Minz, pp. 49-58.

[87] Frederick C. Fliegel and Joseph E. Kivlin, "Attributes of Innovations as Factors in Diffusion," THE AMERICAN JOURNAL OF SOCIOLOGY, Volume 72, Number 3 (November 1966), pp. 235-247.

Again, many theorists have identified clusters of these variables which they thought affected the institutionalization of change. For example, Huefner[88] thought that a process which: (1) promoted democratic decision making; (2) developed alternative goals or policies; and, (3) established a flexible planning sequence, had more potential for being successful in the institutionalization of change. Tye[89] believed that a change process which: (1) promoted compromises; (2) eliminated individual role conflict; and, (3) used problem-solving techniques, had more potential for being successful in the institutionalization of change. Worcester[90] believed that a process which: (1) could be undertaken gradually; (2) provided margin for error; (3) used disagreements constructively; and, (4) respected the inputs of groups and individuals, had more potential for being successful in the institutionalization of change. Winn[91] believed that process models which: (1) spent too much time on data gathering and too little time on planning for the implementation of the change; (2) were fixated by the proposals on paper; and, (3) were not concerned with the training of teachers in the use of the change, had less potential for being successful in institutionalizing change. Unruh and Turner[92] thought that process models which: (1) developed vague and unmeasurable objectives; and, (2) selectively restricted the kinds of information received about the new proposed program, had less potential for being successful in the institutionalization of change. Purdy[93] thought that: (1) the failure to establish effective communication links with the staff, leadership and public; (2) the failure to deal with internal staff conflict; (3) excessive demands in time and energy on leaders; (4) limited evaluation of a change; and, (5) absence of research in planning the program, would limit the successful institutionalization of a change. Foster[94] thought that if teachers were: (1) inactive in the process; (2) felt little responsibility to the program; and, (3) were told what to aim for in the change program, the change would have less chance of being institutionalized. Hetzel and Barnard[95] believed that if: (1) each staff member felt important to the change process; (2) each staff member felt that something was "going on" in the process; (3) the process had a time line of evaluation check points; and, (4) individual staff members efforts to change were publicized, there was greater opportunity for the successful institutionalization of a change. Corwin[96] found that if: (1) a higher level of consensus was developed in the organization about the need for change; (2) a critical mass of change agents were trained to lead change efforts; (3) power was equalized; and, (4) a coordinating agency was developed to provide access to needed resources, an environment would be created which was conducive to reform.

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[88] Robert P. Huefner, "Strategies and Procedures in State and Local Planning," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATIONAL, op. cit., pp. 16-17.

[89] Kenneth A. Tye, MONITORING THE SYSTEMS: POINTS OF ENTRY. Santa Ana, California: Orange County School Office Supplementary Educational Center, 1969.

[90] Robert M. Worcester, "Managing Change," LONG RANGE PLANNING, III (September 1970), pp. 31-35.

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[91] Ira J. Winn, "Educational Planning and the System: Myth and Reality," COMPARATIVE EDUCATION REVIEW, XIII (October 1969), pp. 343-350.

[92] Unruh and Turner, p. 192.

[93] Purdy, p. 298.

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[94] Richard L. Foster, "The Search for Change," EDUCATIONAL LEADERSHIP, Volume 25, Number 4 (January 1968), pp. 288-289.

[95] Robert Hetzel and Douglas Barnard, "The Human Agenda: Critical Variable in Innovation," EDUCATIONAL LEADERSHIP, Volume 30, Number 6 (March 1973), pp. 529-530.

[96] Ronald G. Corwin, REFORM AND ORGANIZATIONAL SURVIVAL. New York: John Wiley and Sons, 1973, pp. 388-389.

Other theorists have only focused on single attributes of the process of change. These attributes can be divided into three categories, those related to: (1) the quality and focus of the change itself; (2) the change climate created by the process; and, (3) the mechanisms set up in the process to support the change process.

In terms of the quality of change itself, Owen[97], Schmuck and Miles[98], and Buchanan[99] (etc.) thought that process models which failed to use an organic model of organizational development and change had less potential for successful institutionalization of change. Havelock[100] and Chin [101] believed that change processes which ignored people and their concerns had less potential for successful institutionalization of change. Wolf and Fiorino[102] believed that use of a flexible change process would have a positive influence on implementation efforts.

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[97] Joslyn Owen, "Educational Innovation: The Human Factor," JOURNAL OF EDUCATIONAL ADMINISTRATION HISTORY, II (June 1970), pp. 46-53.

[98] Schmuck and Miles, ORGANIZATION DEVELOPMENT IN SCHOOLS, *op. cit.*

[99] Buchanan, "Organizational Development as a Process Strategy for Change," *op. cit.*, p. 10.

[100] Havelock, PLANNING FOR INNOVATION, *op. cit.*, Chapter 10, p. 24.

[101] Chin, p. 42.

[102] Wolf and Fiorino, pp. 83-84.

In terms of the change climate created by the process, Foster[103], Bennis[104], Feitler and Blumberg[105] and Miles[106] (etc.) have argued that only in an "open" (participative) climate can change programs take place. "Open" climates are climates in which the channels of communication are direct and two-way, decision making is achieved by consensus, responsibilities for organizational goals are shared, and management collaborates with its employees. Each one of these characteristics has been studied by the process theorists and each one relates to this "open" climate of change. For example, Buchan[107], Lippitt, Watson, and Westley[108],

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[103] Foster, "The Search for Change," pp. 290-291.

[104] Warren S. Bennis, "Organizational Developments and the Fate of Bureaucracy," INTERDISCIPLINARY FOUNDATIONS OF SUPERVISION, op. cit., pp. 269-277.

[105] Fred Feitler and Arthur Blumberg, "Changing the Organizational Character of a School," THE ELEMENTARY SCHOOL JOURNAL, Volume 71, Number 4 (January 1971), pp. 207-211.

[106] Mathew B. Miles, "Planned Change and Organizational Health: Figure and Ground," CHANGE PROCESSES IN THE PUBLIC SCHOOLS. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1965, pp. 18-21.

[107] William Buchan, "A Design for Introducing Educational Change," EDUCATION, Volume 91, Number 4 (May 1972), pp. 298-300.

[108] Ronald Lippitt, Jeanne Watson, Bruce Westley, THE DYNAMICS OF PLANNED CHANGE. New York: Harcourt, Brace and World, Inc., 1958, p. 42.

Corwin[109] and Wiley[110] (etc.) believed that open direct, two-way channels of communication were necessary ingredients for successful innovation. McCracken[111], Buchan[112] and Glines[113] believed that involvement of the personnel in the school district in varying degrees was necessary for the institutionalization of change. Teachers, especially, as users of the change, needed to be involved in planning, choosing, implementing, and evaluating the new program. Gooler and Ely[114] and Johansen[115] believed that change efforts would be successful if those who were to be effected by the change (usually teachers) were involved in the decisions concerning the change. Corwin[116] and Havelock[117] found that one of the best ways to overcome inter-organizational barriers to the institutionalization of change was to allow individual users to participate in the entire process of change. They found that participation in the change process led to commitment, reduced resistance, and support for the change program. Gooler and Ely[118], Gross, et. al.[119], and Havelock[120] thought that power equalization was possibly a necessary ingredient for lasting acceptance of the change.

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[109] Ronald Corwin, "Strategies for Organizational Innovation: An Empirical Comparison," AMERICAN SOCIOLOGICAL REVIEW, Volume 37 (August 1972), p. 451.

[110] Russell Wiley, "Blocks to Change," EDUCATIONAL LEADERSHIP, Volume 27, Number 4 (January 1970), pp. 351-353.

[111] J. G. McCracken, "Building Community Acceptance for Innovation," EDUCATIONAL LEADERSHIP, Volume 30, Number 6 (March 1973), p. 519.

[112] Buchan, p. 299.

[113] Glines, p. 4.

[114] Dennis D. Gooler and Donald P. Ely, "The Impact of Organization on Curricula Change," EDUCATIONAL TECHNOLOGY, Volume XII, Number 10)October 1972), p. 40.

[115] John H. Johansen, "The Relation Between Teacher's Perceptions of Influence on Local Curriculum Decision-Making and Curriculum Improvement," JOURNAL OF EDUCATIONAL RESEARCH, Volume 51, Number 2 (October 1967), pp. 81-83.

In terms of the mechanisms which could be set up in support of the change process, the members of the Kettering Foundation-Colgate University study[121] thought that the process should first involve members of the organization who were ready to innovate and train them to transfer the change ideas to others less ready to innovate. Buchan[122] thought that if the change program was first piloted to identify its "bugs" and evaluate its relative achievement in the "new" environment, a more positive situation would exist for implementation of the entire program. Wilson[123] thought that experimentation and evaluation were important to success because proponents of a particular innovation were not likely to perceive the difficulties that stand in the way of an innovations success. Havelock[124] and Woods[125] thought that when the users were initially involved with the change program, they needed more support in terms of materials, guides, consultants, workshops (etc.) than later in the program. If teachers, (especially) were helped in these initial stages, there was a greater chance for the program to be accepted. Of the kinds of support judged to be important to the change effort, Buchan[126] believed that in-service conferences, workshops, and parent visitations were needed; Gross, et. al.[127] believed that summer training and in-service training of teachers to develop a positive attitude towards innovation were needed; Nokes[128] believed that feedback about the results of an action directed towards change was needed; and Wilson[129] (in a study of business organizations) believed that the use of incentives and the distribution of organization rewards to support "new" behavior related to the change were needed. House[130] believed that change models which assumed that individuals involved in the process of implementation of the change program pursued common goals and were held accountable for their performance had less potential for being successful in the institutionalization of change.

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[116] Corwin, REFORM AND ORGANIZATIONAL SURVIVAL, p. 122.

[117] Havelock, PLANNING FOR EVALUATION, op. cit., Chapter 6, p. 33.

[118] Gooler and Ely, p. 40.

[119] Gross, et. al., p. 29.

[120] Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 54.

[121] A STUDY OF INNOVATION AND CHANGE IN EDUCATION, p. 5.

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[122] Buchan, p. 299.

[123] James G. Wilson, INNOVATION IN ORGANIZATIONS: NOTES TOWARDS A THEORY. (Paper presented to the American Political Science Association, New York City, September 1963, p. 209.)

[124] Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 129.

[125] Woods, p. 57.

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[126] Buchan, pp. 299-300.

[127] Gross, et. al., p. 26.

[128] Peter Nokes, "Feedback as an Explanatory Device in the Study of Certain Interpersonal and Institutional Processes," HUMAN RELATIONS, Volume 14, Number 4 (1961), p. 381.

[129] James Q. Wilson, pp. 210-215.

[130] Ernest R. House, "A Critique of Linear Change Models," EDUCATIONAL TECHNOLOGY, Volume XI, Number 10 (October 1971), p. 35.

Havelock[131] thought that the ambiguity of goals was a problem in the institutionalization of change as it reinforced the effects of vulnerability and status. Glines[132] thought that the changing of administrators supervising the change program should be avoided, because when supportive administrators left, they were usually replaced by less supporting administration. The process of change needed support from the administrators to be successful.

The third type of mediating variables can be viewed as specific attributes of the role of the agent of change. These attributes affect the perceived quality of the change agent's performance. Many theorists have identified clusters of these variables which they thought affected successful institutionalization of change. Although these variables should serve as guides to the roles and strategies followed by agents of change, they should not be viewed as absolute qualities describing successful change agents because agents' roles in specific organizations and for specific types of change are all different. Also, there may be many agents of change involved in each change effort, with each one assuming a different responsibility for the success of the change program. When the variables relate to one type of change agent, it will be described as such. When the variables relate to many types of change agents, the term change agents will be used generically.

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[131] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 17.

[132] Glines, p. 3.

Rogers and Shoemaker[133] thought that a change agents' success in institutionalizing change positively related to: (1) his client orientation and empathy; (2) his credibility; and, (3) his efforts to urge his clients to increase their ability to evaluate the innovation. Greiner[134], in his study of top managers in industry, found that top managers who: (1) assumed an active role in evaluating the problem and arousing interest in accepting the change; (2) attempted to share and equalize their power and authority; and, (3) encouraged collective decision making, were more successful in institutionalizing change. Lawrence[135], in his study of change in industry, thought that agents of change who: (1) used clear terms; (2) involved people in the development of innovations; and, (3) were concerned with coordination and communication problems, overcame some inherent resistance to the acceptance of change. Buchanan[136] thought that change agents who: (1) introduce a model for diagnosing the system; (2) encourage greater self-maintenance and autonomy; and, (3) have a professional position outside the system, were more successful in institutionalizing change. Duncan[137] thought that change agents who: (1) were acknowledged as legitimate in their role; (2) shared their expectations about the change process; (3) were sanctioned; and, (4) shared the values of the client system, were more likely to be successful in institutionalizing change. Rogers[138] thought that change agents who: (1) developed a group feeling of safety and reduced group defensiveness; (2) developed a climate of trust; (3) encouraged feelings to be kept in the open; and, (4) developed feedback mechanisms between individuals, were more likely to be successful change agents. Cooke and Zaltman[139] thought that change agents who: (1) develop a climate of trust; (2) help develop change goals which seem consistant with the organization's goals; (3) seem competent communicators; (4) seem to possess good will; (5) seem dynamic; and, (6) develop collaborative and cooperative communication links, were more likely to be successful change agents. Miller[140] thought that: (1) community support; (2) superintendent support; (3) staff aid; (4) liason (boundary spanner) people in the district; (5) staff commitment; and, (6) administrative support, facilitated the institutionalization of the change program.

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[133] Rogers and Shoemaker, pp. 237-247.

[134] Gene W. Dalton, Paul Lawrence, Larry E. Grenier, ORGANIZATIONAL CHANGE AND DEVELOPMENT, Richard I. Irwin, Inc., editors. Homewood, Illinois: The Dorsey Press, 1970, pp. 215-221.

[135] *Ibid.*, pp. 193-195.

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[136] Paul C. Buchanan, "Critical Issues in Organizational Development," CHANGE IN SCHOOL SYSTEMS, Goodwin Watson, editor. Washington, D.C.: NTL, 1967, pp. 64-65.

[137] Duncan, pp. 3, 4, 26.

[138] Carl Rogers, "A Plan for Self Directed Change in an Educational System," EDUCATIONAL LEADERSHIP, Volume 24, Number 8 (May 1967), pp. 717-731.

Other change agent theorists have focused on singular attributes of the agent of change. Their variables can be divided into several categories related to the present and proposed role and position of the agents of change.

In terms of the variables related to the present role and position of the agent of change, Glines[141] believed that if the change agent developed a climate of trust in the change process, he would be more likely to be successful in the change program. Duncan[142] believed that if the change agent came from outside the system, he would be in a better position to establish himself as objective and professional, conditions important to the change effort. Havelock[143] believed that administrators, as formal leaders, would have a major effect on the utilization of new ideas if they supported and facilitated users' efforts to retrieve and use the new ideas. Chesler and Barakat[144] believed that administrators who demonstrated an interest in and developed norms to support the professional growth of their teachers were more likely to be successful change agents.

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[139] Cooke and Zaltman, pp. 15, 17, 23, 29.

[140] Peggy L. Miller, "Innovation and Change in Education," EDUCATIONAL LEADERSHIP, Volume 27, Number 4 (January 1970), pp. 339-340.

[141] Gline, p. 41.

In terms of the variables related to the proposed roles and positions of change agents, Havelock[145] believed that change agents who assumed a collaborative, non-directive role in the change effort were more likely to be successful. Davies[146] believed that agents of change who performed like the agriculture extension agents and combined the roles of consultant, resource provider, trainer, and process helper in a change program were more likely to be successful. Davies[147] and Duncan[148] believed that teams of trained change agents working together on a change program would be more successful than single change agents. Beckerman[149] believed that a joint inside-outside system team of change agents (rather than an inside team and outside team) would be more successful in working on a change program. The outside team members would work to stimulate needed program development from the outside and train inside team members to initiate the developed program from within. The resources of the universities and research centers would be linked to the school districts in this effort and the needs of the school districts would be communicated to the resource centers.

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[142] Duncan, p. 12.

[143] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 7, p. 10.

[144] Mark A. Chesler and Halim I. Barakat, THE INNOVATION AND SHARING OF TEACHING PRACTICES: A STUDY OF PROFESSIONAL ROLES AND SOCIAL STRUCTURES IN SCHOOLS. Ann Arbor, Michigan: Center for Research in Utilization of Scientific Knowledge, 1967, pp. 30-31.

[145] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 14.

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[146] Don Davies, "An Interview with Don Davies," AUDIO-VISUAL INSTRUCTION, Volume 18 (January 1973), p. 13.

[147] *Ibid*.

[148] Duncan, p. 13.

[149] Marvin Beckerman, "Educational Change Agents: An Inside-Outside Team," EDUCATIONAL LEADERSHIP, Volume 30, Number 6 (March 1973), p. 531.

Intervening Variables -- Like mediating variables, intervening variables are also believed to affect the three descriptors of change. Unlike the mediating variables, however, the intervening variables can not be easily or quickly introduced, developed, manipulated or altered by the agents of change. Unlike the mediating variables, these variables usually exist a priori to the change program. They usually define a condition in which change is made and which change agents should learn to cope rather than define a condition in which change should be made. Recent change theorists have prescribed organizational development as a process to bring an organization's a priori intervening variables in line with the facilitating prescribed intervening variables. One drawback to OD, however, is that it requires much time and effort before a change is introduced. Essentially, there are three types of intervening variables: (1) formal organizational variables; (2) informal organizational variables; and, (3) individual variables. If critical clusters of these variables can be identified and categorized by this study, strategies for positively affecting the institutionalization of change can be developed.

Formal Organizational Variables -- The first set of intervening variables, formal organizational variables, has been studied in detail in industrial organizations, but has yet to be comprehensively studied and analyzed in the schools. As used in this study, there are three kinds of formal organizational variables: (1) generic school district or school building variables; (2) specific school building variables; and, (3) specific community variables. The first two kinds of variables are internal to the organization undergoing change, the third is external.

Organizational theorists have categorized generic formal organizational variables in terms of: (1) centralization; (2) size; (3) professionalism; (4) wealth; (5) complexity, (6) formalization; (7) differentiation; and, (8) stability. These variables exist at both the school building and school district level.

A few theorists have looked at clusters of these variables. For example, Miles[150] thought that schools with rigid vertical organizations; low levels of role differentiation, accountability, compulsion, and specialization; and, a high degree of formalization in procedure, found it difficult to be innovative. Havelock[151] thought an organization which had: (1) a defined division of labor and reward system; (2) a clear understanding of job and role expectations, outcomes and goals; (3) coordination of jobs and roles; (4) identified its weak structural elements to avoid overloading them; and, (5) a flexible structure, had an adequate structure for making changes. Mort and Cornell[152] found that an organization with: (1) an unclear division between executive authority and individual responsibility; (2) overcentralization in the superintendents office; and, (3) inadequate coordination and leadership, was likely to impede the institutionalization of change. Engel[153] thought that three prerequisites for change were: (1) decentralization of authority; (2) widely distributed consumer education; and, (3) fiscal power and choice making in education. Pincus[154] thought that bureaucratic structure and incentives of schools were determinants shaping the process of adapting and institutionalizing an innovation. Thompson[155] thought that an

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[150] Mathew B. Miles, "Some Properties of Schools in Social Systems," CHANGE IN SCHOOL SYSTEMS, op. cit., pp. 8-25.

[151] Havelock, A GUIDE TO INNOVATION IN EDUCATION, pp. 53, 69.

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[152] Paul R. Mort and Francis G. Cornell, AMERICAN SCHOOLS IN TRANSITION. New York: Bureau of Publications, Teachers College, Columbia University, 1941, pp. 223-224.

[153] Marten Engel, "Politics and Prerequisites in Educational Change," PHI DELTA KAPPAN, Volume LV, Number 7 (March 1974), p. 459.

[154] Pincus, p. 113.

[155] Victor A. Thompson, "Bureaucracy and Innovation," ADMINISTRATIVE SCIENCE QUARTERLY, Volume 10, Number 1 (June 1965), p. 1.

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industrial organization could be more easily changed if it was structurally complex and decentralized; and had freer communications, project orientations, and increased professionalism.

In terms of centralization of an organization, most theorists believed that decentralization facilitated the institutionalization of a change program. For example, Griffiths[156] believed that when an organization was divided into a hierarchial structure, progressive segregation occured and the more hierarchial the structure of the organization, the less the possibility of change. Huefner[157] and Hage and Aiken[158] (in non-profit organizations) found that a decentralized organizational system facilitated the institutionalization of change because it engendered greater interest and support in planning a program and greater cooperation and communication in all of the varied entry points of decision making. Rogers and Shoemaker[159] and Havelock[160] (in educational organizations) found that a decentralized organizational system facilitated the institutionalization of change because it engendered wider participation in the planning and implementation phases of the change process, greater movement of new ideas through a system, and greater reduction of fear by teachers that the central office staff were assuming total control for the planning of the program.

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[156] Daniel E. Griffiths, Administrative Theory and Change in Organization," INNOVATION IN EDUCATION, Mathew B. Miles (ed.). New York: Bureau of Publications, Teachers College, Columbia University, 1964, p. 434.

[157] Huefner, p. 21.

[158] Jerold Hage and Michael Aiken, "Program Change and Organizational Properties, A Comparative Analysis," THE AMERICAN JOURNAL OF SOCIOLOGY, Volume 72, Number 5 (March 1967), pp. 503-519.

Recently a few theorists have refined their ideas about centralization of organizations. They have argued that there are situations when either organizational centralization or decentralization are important to change. For example, Clark[161] found that when decisions were fragile, a decentralized decision making structure was more facilitative of change than a centralized structure while when decisions were less fragile a centralized decision making structure was more facilitative of change. Havelock[162] thought that organizations which had defined but flexible structures had more potential for change than those organizations which were either totally centralized or totally decentralized.

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[159] Rogers and Shoemaker, p. 314.

[160] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, pp. 24-25.

[161] Terry N. Clark, "Community Structure, Decision Making Budget Expenditures and Urban Renewal in 51 American Communities," AMERICAN SOCIOLOGICAL REVIEW, Volume 33 (March 4, 1968), pp. 576-593.

In terms of the size of an organization, very few conclusive findings exist because measures of size have been difficult to develop or use in isolation from other related variables. Pincus[163] found (in his review of the empirical literature) that small school districts adopted fewer innovations than larger ones. However, other theorists (Havelock, Rogers and Shoemaker, Blau, Mort and Cornell) have not found significant differences in the number of innovations institutionalized in either large or small districts when other school district factors were held constant.

In terms of "professionalism" of school personnel, very little conclusive evidence also exists because clear measures of "professionalism are difficult to develop. Havelock[164] believed that "professionalism" of the teaching staff: (1) increases the exchange of information; (2) brings greater striving to keep up with what outside colleagues are doing; (3) builds concern for research findings on developed programs; and, (4) develops a strong base on which to assert the staff's leadership as promoters of change. However, other theorists have not found any significant direct relationships between teacher professionalism and institutionalization of change.

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[162] Ronald G. Havelock, "Help Scores" from a talk presented to the Industrial Engineering Department at the University of Wisconsin in March 1974.

[163] Pincus, p. 122.

In terms of wealth of a school district, the dominant view has been that the primary determinant of willingness to innovate was the level of per capita school spending[165]. Hughes[166] found that the willingness of a community to spend money was one of the most important factors affecting the amount of innovation undertaken by a school district.

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[164] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 15.

[165] Ibid., p. 119.

[166] Larry W. Hughes, "Organizational Climate - Another Dimension to the Process of Innovation?," EDUCATIONAL ADMINISTRATION QUARTERLY, Volume IV, Number 3 (1968), pp. 16-29.

Havelock[167] explained this relationship when he pointed out that an organization with a good financial situation could afford to seek out new and uncertain discoveries and innovations for experimentation, while an organization without a good financial situation could not. Fliegel and Kivlin[168] believed that it was not high initial cost which was a deterrent to adoption, but high continuing costs.

In terms of complexity of an organization, Blumberg and Schmuck[169] believed that lack of organizational complexity in schools was an inherent barrier to organizational change. And Thompson[170] believed that as an organization became more structurally complex, more opportunity existed for change.

Somewhat divergent conclusions have been drawn about the formalization of an organization. Havelock[171] believed that when organizational rules, tradition, procedures, behavior, and attitudes become routine, habitual, and engraved over time, the natural rigidity of an organization was a barrier to innovation. Wiley[172] believed that when rules of conduct were formalized and when bookkeeping rather than periodic review of organizational procedures was used, blocks to organizational change existed. Cooke and Zaltman[173], however, found that as formalization of the change agents role was established, the change agents work was more effective. Hill and Hlavacek[174] found that when the change process tasks were uncertain and extensive problem solving was necessary, organizations that were formalized and emphasized self control and member participation in decision making were non-effective. Bennis[175] thought that a system which was stable (formalized) in its line of command facilitated the institutionalization of change programs.

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[167] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 9.

[168] Fliegel and Kivlin, pp. 235-248.

[169] Blumberg and Schmuck, p. 31.

[170] Thompson, p. 1.

[171] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 16.

Additional, specific school building variables also have been studied recently in relation to their affects on educational change. For example, Lippitt, et al.,[176] thought that a school unit which: (1) did not set aside a certain amount of time for teachers' meetings; (2) had no rooms to hold teachers' meetings; and, (3) had teachers physically isolated from each other, was more likely to fail in the attempt at institutionalization of change. Miles[177] thought that schools with low integration and low interdependence were less likely to be successful in the institutionalization of change. Brickell[178] thought that the interpersonal communication links of a school unit facilitated the institutionalization of change if they were close and well-used. Lippitt, et. al.,[179] thought that schools which had regular staff meetings established team links, and defined horizontal links between teams, were more likely to be successful in the institutionalization of change. Trump[180] thought that change was more likely to be successfully institutionalized if the teacher was involved in formal training sessions. Miles[181] thought that schools which had vague, multiple, conflicting, emotional, and non-measurable goals tended to be less successful in the institutionalization of change.

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[172] Wiley, p. 351.

[173] Cooke and Zaltman, p. 32.

[174] Richard M. Hill and James D. Hlvacek, "The Venture Team: A New Concept in Marketing Organizations," JOURNAL OF MARKETING, Volume 36 (July 1972), p. 2.

[175] Bennis, p. 39.

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[176] Lippitt, et. al., pp. 327-334.

[177] Miles, p. 12.

[178] Brickell, ORGANIZING NEW YORK STATE FOR EDUCATIONAL CHANGE. Albany, New York: State Education Department, 1961, pp. 20-21.

[179] Lippitt, et. al., pp. 321-324.

[180] J. Lloyd Trump, "Influencing Change at the Secondary Level," PERSPECTIVES ON EDUCATIONAL CHANGE, *op. cit.*, p. 68.

As educational change theorists began to see that school systems were vulnerable to forces in the community[182] (i.e., community voting down referendums, etc.), specific community variables, originally studied by sociologists and political scientists, were studied by educational theorists. Although few studies were undertaken on the community characteristics in relation to the institutionalization of change, community values, attitudes, political beliefs, wealth, and geography were studied in relation to the innovativeness of adoptiveness of school districts or communities.

More studies have been undertaken on the relationship between the wealth of a community and educational innovation than any other community variable. Here the findings have been relatively consistent. For example, Mort and Cornell[183], Hughes[184] and Havelock[185] (in reviewing the literature) found that a community's financial willingness to support change efforts was an important factor in the innovativeness of a school district.

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[181] Miles, pp. 6-7.

[182] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 6, p. 16.

[183] Mort and Cornell, pp. 465-472.

[184] Hughes, pp. 16-29.

[185] Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 131.

In terms of the geography and size of a community, larger more urban communities have been found to be more innovative than smaller rural communitites. For example, Mort and Cornell[186] found (in their study of 36 Pennsylvania communities) that rural communities had a lower adaptiveness index than surburban or urban communities. Corwin[187] found (in his study of teacher corps programs) that schools located in larger cities in modernized states showed most change, while schools in smaller cities showed less change in those states.

In terms of the values and attitudes of a community, educational theorists found that there were many different community characteristics which related to the adaptiveness of a school district. Barnes[188] found that communities with discrepant value systems, heterogeneous populations, public apathy, regional isolationism, and underdeveloped local governments, adversely affected the successful institutionalization of change. Brickell[189] found that communities unwilling to pay for quality programs or attract professional teachers and administrators would be less likely to accept change programs. Brickell[190] and Watson[191] found that communities resisted the institutionalization of those programs when the programs conflicted with their values and beliefs. Flinn[192] found that farmers in communities in which innovations were viewed most favorably were more apt to be innovative than members of communities in which innovations were viewed less favorably. Many relations with community innovativeness were found in terms of community structure. Crain and Rosenthal[193] found that the higher the education level in a community, the fewer innovations which were attempted. Clark[194] found that the greater the decentralization of community power, the greater the innovativeness of a community. Mort and Cornell[195] found that communities in which conscious effort was taken to keep the public informed with what was going on were more innovative than communities not concerned with public relations.

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[186] Mort and Cornell, pp. 115-118.

[187] Corwin, REFORM AND ORGANIZATIONAL SURVIVAL, p. 226.

[188] Melvin Barnes, "Planning and Effecting Needed Changes in Urban and Metropolitan Areas," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., pp. 204-221.

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[189] Henry M. Brickell, "Organizing for Educational Change," CHANGE AND SECONDARY SCHOOL ADMINISTRATION, Glen F. Ovard, editor. New York: The MacMillan Company, 1968, p. 138.

[190] Henry A. Brickell, ORGANIZING NEW YORK STATE FOR EDUCATIONAL CHANGE. Albany, New York: State Educational Department, 1961, pp. 20-21.

[191] Watson, "Resistance to Change," PLANNING OF CHANGE, op. cit., p. 495.

[192] William L. Flinn, "Influence of Community Values in Innovativeness," AMERICAN JOURNAL OF SOCIOLOGY, Volume 76 (May 1970), p. 985.

[193] Robert Crain and Donald Rosenthal, "Community Status as a Dimension of Local Decision Making," AMERICAN SOCIOLOGICAL REVIEW, Volume 32 (1970), pp. 970-984.

Informal Organizational Variables -- The second set of intervening variables, the informal organizational variables, has been more thoroughly studied and evaluated by social system theorists than has the set of formal organizational variables. Most of those variables have been described in relation to organizational climate or health. If an organization's climate was thought to be adaptive to changing conditions it was defined as healthy[196] and open. Bennis[197], Tye[198] and Hughes[199] believed that an open (healthy) climate was the most important kind of organizational climate because it provided for the development of a spirit of inquiry and choice. Havelock and Benne[200] believed that a closed (unhealthy) organizational climate hindered the institutionalization of change because it restricted the sharing of knowledge and ideas. Miles[201] described ten features of a healthy organization. These were: (1) focused goals; (2) adequate communication links; (3) equalized power bases; (4) utilized resources; (5) cohesive staff; (6) high morale; (7) tendency to innovativeness; (8) staff autonomy; (9) tendency to adoption; and, (10) adequate problem solving structure. Other theorists have described variations of these features in relation to the successful institutionalization of change. For example, Lippitt, et. al.[202], believed that change was more likely to be successfully institutionalized when (1) the sharing of ideas was encouraged; (2) teachers were recognized for their cooperation with the change process; (3) team leaders supported and encouraged team members to experiment with the innovation; (4) the principal and supervisor actively supported the change program; (5) teachers felt that they had influence in the educational process; and, (6) the principal created a school atmosphere of sharing and experimentation. Hage and Aiken[203] studied change in non-profit organizations and found that: (1) an increase in the degree of staff participation; (2) an increase in decision making; (3) a decrease in job codification; and, (4) an increase in the degree of job satisfaction were positively related to an increase in the number of program changes. Watson[204] believed that much resistance to change could be overcome if: (1) important teachers, administrators, and Board of Education members were linked to the change program; (2) top administrators supported the program; (3) the autonomy and security of the teachers were not threatened by the program; (4) decisions were collectively reached; and, (5) empathy, trust, and cooperation were engendered. Bennis[205] believed that change would be more capable of being successfully institutionalized if the user system was: (1) informed about the nature and consequences of the change system; (2) allowed to help develop and implement the change program; and, (3) encouraged to develop a feeling of trust for the agent of change. Buchanan[206] believed that the institutionalization of change was more feasible if the users of the change: (1) were encouraged to plan for an experiment with the change; (2) given feedback on how successful they had been in the use of the change; and, (3) felt respected for their contribution to the change process. Gross, et. al.[207],believed that as: (1) knowledge and objectivity to analyze problems were developed; and, (2) communication between people increased, there would be greater likelihood of the organization's ability to recognize its need for change.

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[194] Terry N. Clark, "Power and Community Structure: Who Governs, Where and When?" SOCIOLOGICAL QUARTERLY (Summer 1967), pp. 291-316.

[195] Mort and Cornell, AMERICAN SCHOOLS IN TRANSITION, p. 297.

[196] Richard D. Kimpston and Leslie C. Sonnabend, "Organizational Health: A Requisite for Innovation," EDUCATIONAL LEADERSHIP, Volume 30, Number 6 (March 1973), pp. 546.

[197] Bennis, p. 50.

[198] Tye, op. cit., 1969.

[199] Hughes, pp. 16-29.

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[200] Ronald Havelock and Kenneth D. Benne, "An Exploratory Study of Knowledge Utilization," CONCEPTS OF SOCIAL CHANGE, *op*. *cit*., p. 59.

[201] Mathew G. Miles, "Planned Change and Organizational Health: Figure and Ground," CHANGE PROCESSES IN THE PUBLIC SCHOOLS, *op*. *cit*., pp. 18-21.

[202] Lippitt, et. al., pp. 307-324.

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[203] Hage and Aiken, p. 503.

[204] Goodwin Watson, "Resistance to Change," CONCEPTS OF SOCIAL CHANGE. Goodwin Watson, editor. Washington, D.C.: NTL, 1969, pp. 22-23.

[205] Bennis, p. 176.

Since there are a few variables in this set of informal variables which have been thought to be particularly important to the institutionalization of change, five areas (staff attitudes and relations, supervisory - teacher relations, role of superintendent, role of principal, and status of change agent) will be described in greater depth. In terms of staff attitudes and relations, most theorists thought that open trusting, secure staff relations were favorable to the institutionalization of change. Chesler and Fox[208] thought that where relations between organizational personnel were open, sharing, and supportive, a climate for change existed. Silverbank[209] thought that where: (1) channels of communication were open; (2) responsibilities of staff were shared (not compartmentalized); and, (3) decision making was shared, the organizational climate was conducive to successful innovation. Havelock[210] and Mangione[211] thought that where there were numerous, person-to-person open channels of communication among the staff, there was a greater possibility for effective knowledge transfer and feedback, a pre-condition for institutionalization of change. Chesler and Barakat[212] found (in their study of Michigan schools) that where peer relations were open and trusting, there was greater evidence of an attention to teacher innovations and professional sharing. Havelock[213] thought that when major groups or the staff were able to talk to each other, express their feelings, and exchange ideas; they were open to obtaining many new ideas and using information sources inside and outside the organization. This situation, too, was conducive to change.

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[206] Paul C. Buchanan, "The Concept of Organizational Development, or Self-Renewal as a Form of Planned Change," CONCEPTS OF SOCIAL CHANGE, op. cit., p. 7.

[207] Gross, et. al., pp. 24-25.

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[208] Chesler and Fox, p. 26.

[209] Silverbank, p. 240.

[210] Havelock, PLANNING OF INNOVATION, Chapter 6, p. 25.

[211] Samuel Mangione, "Bringing Perspective to the Change Situation," EDUCATIONAL LEADERSHIP, Volume 27, Number 4 (January 1970), p. 260.

[212] Chesler and Barakat, p. 18.

McCracken[214], Rogers[215], Wood[216] and Havelock[217] thought that where staff members were secure and trusting of each other, the climate was conducive to change. McCracken[218] thought that when there was mutual trust between the personnel of a school district, a common cause could be accepted and worked upon. Rogers[219] thought that when groups felt secure, defenses were reduced, real feelings were expressed and individuals were less rigid and more open to change. Wood[220] thought that when individuals felt secure in an organization, they believed that they: (1) could create new programs and strategies to improve the educational program in their schools; and, (2) would receive needed psychological and financial support for their efforts to institutionalize innovative programs. Doak[221] thought that when individuals felt cohesive and secure with other group members, they could actively work towrads examining alternatives which lead to organizational change. Thompson[222] thought that an organization could be more easily changed if its members had positions sufficiently secure and protected from the status risks involved in change.

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[213] Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 69.

[214] McCracken, p. 519.

[215] Rogers, pp. 719-720.

[216] Fred H. Wood, "A Climate for Innovation," EDUCATIONAL LEADERSHIP, Volume 30, Number 6 (March 1973), p. 916.

[217] Havelock, A GUIDE TO INNOVATION IN EDUCATION, p. 155.

[218] McCracken, p. 519.

[219] Rogers, pp. 719-720.

In terms of supervisory - teacher relations (developed in the implementation phase of the process of change), most theorists believed that open, collaborative, and supportive relations were conducive to change. Unruh and Turner[223] believed that it would be difficult to institutionalize a change if the supervisory-teacher relationship was characterized by: (1) poor communication; (2) lack of forethought; and, (3) little supervisory concern for rewarding and supporting the teacher's attempts to experiment with the change program. Hansen[224] believed that it would be difficult to institutionalize a change unless the supervisor and teacher gain consent, consensus, and compromise for their own perspective. And, Bennis[225] believed that if would be less difficult to institutionalize a change if a mutually deliberative and collaborative supervisory-teacher relationship was established.

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[220] Wood, p. 916.

[221] E. Dale Doak, "Organizational Climate: Prelude to Change," EDUCATIONAL LEADERSHIP, Volume 27, Number 4 (January 1970), p. 369.

[222] Thompson, pp. 12-14.

Traditionally, the role played by the superintendent in the institutionalization of change was, also, seen as crucial. Carlson[226] found that superintendent's who were: (1) from outside the system; (2) opinion leaders among superintendents; and, (3) very persuasive, communicative, and involved in educational activities, tended to adopt innovations earlier than superintendents without these characteristics. In addition, Carlson[227] believed that the more innovative superintendent tended to: (1) have more formal education; (2) participate in more professional meetings, (3) be more well-known and more often asked for advice; (4) hold a more prestigious superintendency; (5) feel that he had more support for change from the school board members; and, (6) rely more on outside sources of information and advice than the less innovative superintendents. Kimbrough[228] thought that the superintendent who was familiar with and who manipulated the power structure in his community facilitated the institutionalization of change programs in his school district.

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[223] Unruh and Turner, pp. 160-161, 170.

[224] Kenneth H. Hanson, "Planning for Changes in Education," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., pp. 30, 32.

[225] Bennis, p. 192.

[226] Carlson, p. 53.

Traditionally, also, the role assumed by the administrator or principal of a school unit was thought to be crucial to the successful institutionalization of change. Taylor[229] thought that the administrator of a school could not play the same role as that of a change agent because he was associated with administrative fiat. Howsam[230] found that teachers were more likely to accept educational change programs if the principal was perceived as actively supportive of the teacher's role in the implementation of the change program. Abbott and Eidell[231] thought that if the administrator worked to: (1) understand the organization as a total system; (2) support teachers in their experiments with the change programs; (3) develop the skills and tools for using information sources more adequately; and, (4) clarify the division of labor in his school - he would be more likely to succeed in the institutionalization of the change program. Jung, Fox, and Lippitt[232], Hage and Aiken[233] and Brickell[234] all found that innovations were more likely to be accepted by teachers if they believed that they had their administrator's support.

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[227] Ibid., p. 64.

[228] Ralph B. Kimbrough, "Power Structures and Educational Change," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., pp. 126-129.

[229] Bob L. Taylor, "How Effective is a Model for Introducing Planned Change," SOCIAL EDUCATION, Volume 35 (May 1971), p. 451.

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[230] Robert B. Howsam, "Effecting Needed Changes in Education," PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION, op. cit., p. 76.

[231] Max G. Abbott and Terry L. Eidell, "Administration Implications of Curriculum Reform" EDUCATIONAL TECHNOLOGY, X (May 1970), pp. 62-64.

[232] Charles C. Jung, Robert Fox, and Ronald Lippitt, "An Orientation and Strategy for Working on Problems of Change in School Systems," CHANGE IN SCHOOL SYSTEM, op. cit., p. 72.

[233] Hage and Aiken, p. 307.

[234] Brickell, ORGANIZING NEW YORK STATE FOR EDUCATIONAL CHANGE, p. 31.

Chesler and Barakat[235] believed that where administrators developed norms which supported innovative, professional teachers, there would be a professional atmosphere which was more conducive to teacher innovation and organizational change. Chesler and Barakat[236] found that when staff members saw their principal as having substantial upwards influence in relation to the superintendent, they tended to innovate more often than those who saw their principal as having little influence.

The final variable in the set of informal organization variables which was thought to be crucial to the successful institutionalization of change was the kind of status accorded to the agent of change by the client system. Rogers and Shoemaker[237] found that change agents who were perceived with a high degree of social status, cosmopolitanism, literacy, and education were thought to be more capable of affecting change. Brickell[238] and

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[235] Chesler and Barakat, p. 15.

[236] *Ibid*., p. 190.

[237] Rogers and Shoemaker, p. 241.

[238] Brickell, "Organizing for Educational Change," *op*. *cit*., pp. 142-143.

Bennis[239] thought that change agents who were trusted were more successful in institutionalizing change. Corwin[240] found that where the change agents were judged to be competent but uniquely different from the staff, conflict, tension, and friction in the organization often increased and lead to the awareness of the need for change.

Individual User Variables -- The third and final set of intervening variables, the set of individual user variables, has also been studied in depth by change theorists. In general, these theorists believed that the individual user's background attitudes, values, feelings about the organization, and feelings about change and themselves directly influenced the institutionalization of a change program. Although there is a great deal of overlap in these areas, the relations between innovation and each one of these individual user characteristics will be described in detail. Also, since more users of change are teachers, rather than other professionals, most of the user variables will be realted to teachers.

Chesler and Barakat[241] found that teachers who:

(1) came from a background where one family member had

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[239] Bennis, p. 176.

[240] Corwin, REFORM AND ORGANIZATIONAL SURVIVAL, p. 264.

[241] Chesler and Barakat, pp. 71, 49.

been or was now a teacher; and (2) spent more of their early years in suburban or urban areas rather than rural areas, tended to be more innovative than teachers without this background. They did not find that marital status, sex, age, or number of children made a difference in teacher innovation. Corwin[242] found that schools where there was: (1) a high proportion of teachers in a union; (2) high teacher competence and interdependence, (3) high teacher verbal ability; and, (4) highly competent boundary spanners (agents of change), were more likely to be innovative than schools without these characteristics. Mort and Cornell[243] found that schools where teachers were from many different training institutions were more adaptable than schools where teachers were from few training institutions. Chesler and Barakat[244] found that teachers who were trained in one of the academic subjects tended to share their practices with others more than teachers who were trained in education or non-academic subjects. Sharing was significantly related to innovation. Mort and Cornell[245] and Chesler and Barakat[246] found that the amount of teacher experience was related to the adaptiveness of a school. They found that: (1) the greater the number of years a teacher had been teaching in the same grade or subject; and, (2) the greater the number of years the teacher had been teaching in the same school, the lower their tendency to be innovative. Also, Chesler and Barakat[247] found that: (1) teachers with a moderate amount of experience (4-12 years) innovated more often than teachers with more or less experience; and, (2) teachers who reported that they spent a great deal of time teaching academic material innovated more than teachers who spent less time on these tasks.

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[242] Corwin, REFORM AND ORGANIZATIONAL SURVIVAL, pp. 275-262.

[243] Mort and Cornell, AMERICAN SCHOOLS IN TRANSITION, p. 337.

[244] Chesler and Barakat, p. 56.

In terms of the attitudes and values of the individual user, Hansen[248] believed that individuals who were willing to change and were open to new experiences and ways of doing things were more likely to accept change programs. Chesler and Barakat[249] found that teachers who were more open to change were more likely to share their teaching practices. Teachers who seemed to innovate more were higher on the sharing index than those who did not. Havelock[250] and Chesler and Barakat[251] believed that a person would accept an innovation if it was congruent to his beliefs. Chesler and Barakat[252] also found that staff groups having a low degree of agreement in educational objectives tended to innovate more than staff groups having a high degree of agreement. Gross, et. al.[253] and Mort and Cornell[254] believed that where organizational members had been asked to change before, they were more likely to have a favorable attitude towards changing again than those members of organizations where a history of change was absent. Havelock[255] in education and Davey[256] in business found that a highly dogmatic or close-minded person would tend to restrict his access to and acquisition of new information, a necessary condition for the acceptance and institutionalization of change.

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[245] Mort and Cornell, AMERICAN SCHOOLS IN TRANSITION, p. 257.

[246] Chesler and Barakat, pp. 73-91.

[247] Ibid., pp. 73-91.

[248] Hansen, p. 24.

[249] Chesler and Barakat, p. 59, 36.

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[250] Havelock, PLANNING AND INNOVATION, OP. CIT., Chapter 4, p. 27.

[251] Chesler and Barakat, p. 17.

[252] *Ibid*., p. 170.

[253] Gross, et. al., p. 23.

[254] Mort and Cornell, AMERICAN SCHOOLS IN TRANSITION, p. 457.

[255] Havelock, PLANNING FOR INNOVATION, Chapter 4, p. 5.

[256] Neil G. Davey, THE EXTERNAL CONSULTANT'S ROLE IN ORGANIZATIONAL CHANGE. East Lansing, Michigan: Michigan State University Press, 1971, p. 20.

In terms of an individual's feeling about his job and his position in an organization, Chesler and Barakat[257] found that teachers who had greater commitment to the teaching profession (demonstrated by their active participation in professional activities) tended to innovate more than teachers without great commitment. Also, they found that teachers who were less satisfied with their current position in the organization were less likely to invest a great deal of energy in innovating activities. George and Bishop[258] thought that where the teacher viewed the organizational structure as compatible to his interests, he would believe that the climate of the organization was open, a situation positively affecting the successful institutionalization of change. Telfer[259] thought that organizations in which: (1) staff turnover was high; (2) staff apathy was high, and, (3) administrative support was low, were less likely to successfully institutionalize a change program. Carlson[260] believed that domestication of the school staff was an obstacle to the acceptance of a change program. Marcum[261] believed that a younger professional staff, with lower tenure in the system which had higher educational expectations for the children was more included to accept change programs. Chesler and Barakat[262] found that in schools: (1) where the staff had a minimal feeling of discrepency between their desired and actual influence in the school; (2) where the staff felt fewer demands for organizational conformity; (3) where the staff felt that staff relations were less impersonal and more intimate and friendly; and, (4) where the staff felt minimally alienated from life in the school, there was likely to be more staff innovativeness than schools without these characteristics. In general, for all of these findings, there was a positive relation between staff innovativeness and staff feelings about their roles, peer relations, organization norms, and principal behavior.

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[257] Chesler and Barakat, pp. 17, 25.

[258] George and Bishop, p. 472.

[259] Richard D. Telfer, "Dynamics of Change, THE CLEARING HOUSE, XLI (November 1966), pp. 131-135.

In terms of an individual's feeling about himself and change, Dalton[263], Rogers and Shoemaker[264] and Havelock and Benne[265] believed that unless an individual felt the need to change, he wouldn't. Chesler and Barakat[266] found that schools: (1) where teachers felt that they had high influence in school; (2) where teachers felt more respected and secure with their colleagues and principal; and, (3) where teacher's considered themselves free and able to try new ideas and practices - tended to innovate more often than schools without these characteristics. Mirz[267] believed that even if a person was convinced of the superiority of an innovation, he would not try to adopt it if he believed he lacked the abilities it demanded. Havelock[268] believed that individuals willing to take risks were more likely to innovate than those individuals not.

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[260] Carlson, p. 134.

[261] LaVerne R. Marcum, ORGANIZATIONAL CLIMATE AND THE ADOPTION OF EDUCATIONAL INNOVATIONS. Logan, Utah: Utah State University, 1968.

[262] Chesler and Barakat, pp. 165, 166, 123, 116.

In terms of an individual's general tendency to be innovative, Rogers and Shoemaker[269] believed that early adopters (in this case - superintendents) of an innovation: (1) had more education; (2) were more socially participative; (3) were more exposed to mass media; (4) were more cosmopolitan; (5) were less dogmatic; (6) could deal with abstractions, and, (7) had higher achievement aspirations for themselves than later adopters of an innovation. Watson[270] and Blumberg and Schmuck[271] believed that individuals who: (1) were complacent, habitual, and dependent; and (2) felt impotent and insecure would tend to resist innovations. Havelock[272] believed that early adopters of medical innovation; (1) attended specialist meetings; (2) read several professional journals; (3) appealed to several sources before making a judgement; (4) visited demonstration sites to keep up-to-date in terms of their practice; and, (5) resided near training centers. Chesler and Barakat[273] found that educators' attendance in educational meetings outside their school district was positively related to the behavioral orientation of innovative practices. Wolf and Fiorino[274] found that early adapters spent time in learning about alternatives to their practice from outside people. Havelock[275] believed that those individuals who initially adapted new ideas did so because they were influenced by the opinion leaders in their group.

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[263] Dalton, p. 81.

[264] Rogers and Shoemaker, p. 103.

[265] Havelock and Benne, p. 65.

[266] Chesler and Barakat, pp. 105, 17, 19.

[267] Minz, pp. 49-58.

[268] Havelock, TRAINING FOR CHANGE AGENTS, pp. 33-34.

[269] Rogers and Shoemaker, pp. 107, 187-189.

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[270] Watson, pp. 12-17.

[271] Blumberg and Schmuck, p. 32.

[272] Havelock, PLANNING FOR INNOVATION, op. cit., Chapter 4, p. 28.

[273] Chesler and Barakat, p. 139.

MUS-E as a Change Program -- In the preceding paragraphs, many elements of change have been identified as affecting the successful institutionalization of change. However, these elements of change have not been directly viewed in relation to the institutionalization of MUS-E and, thus, the implications drawn from change in general to change in particular may be distorted and inaccurate. For this reason, some of the most important differences and characteristics of the organizational component of the multiunit school will be viewed in contrast to change programs in general.

First, unlike many change programs, MUS-E tends to involve all of the different kinds of change. For this reason, it will be difficult to: (1) isolate its change elements in terms of the different kinds of change; and

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[274] Wolf and Fiorino, p. 81.

[275] Havelock, PLANNING FOR INNOVATION, Chapter 7, p. 11.

(2) relate any specific kind of change component to any specific mediating variable. Second, unlike many change programs, MUS-E is designed to use a modified version of the organizational development model of changing. For this reason, it will be difficult to identify which process model: (1) is being utilized at any one point in time; (2) is being referred to by the respondents of the questionnaire; and, (3) is related to which specific mediating variable. Third, unlike most change programs, MUS-E acknowledges and uses the contributions of all the different types of agents of change. For this reason, it will be difficult to accurately assess which mediating variable or what effect is related to each agent of change. Fourth, unlike most change programs, MUS-E is a planned change program, explicitly and tacitly involving the acceptance and commitment to change on the part of those individuals involved in working with it. For this reason, it may be difficult to equate the multiunit organizational component of change with change programs which are not concerned with the individuals involved in working with them. And, fifth, unlike most change programs, MUS-E has in its design, certain facilitative mediating variables of change (i.e., collective decision-making, open school climate, equalized power, shared responsibility, etc.). For this reason, it may be difficult to equate the multiunit

organizational component of change with change programs which do not have such facilitative mediating variables of change built into their design.

In general, the kind of change and process of changing of MUS-E will be viewed in generic terms. Reference will not be made to specific types of changes or processes of changing. The agents of change will be viewed as administrators or process consultants. The roles of educational researchers or technical consultants will not be analyzed. All of the variables of change will be viewed in relation to the institutionalization of MUS-E whether they were planned for in the design of MUS-E or not.

SUMMARY OF CHANGE LITERATURE

Only a few change theorists have been able to identify specific relationships between the variables of change and the institutionalization of change. Most change studies have focused on the implications of introducing new developments, not on the process itself. Despite the inconclusive findings about the important variables related to the institutionalization of a change, most change theorists believe that there are certain descriptors of change which need to be looked at in setting up a successful change program. Five descriptors of change (types of change, process of change, agents of change, mediating variables, and intervening variables were used in this study.

Types of Change -- Change theorists have identified two, three, four, or five kinds of change. They have viewed change in many ways - in terms of what was changed, how much was changed, and who was affected by the change. Change theorists have differentiated between: (1) structural change, technological change, and humanistic change; (2) new technical advances, new processes, new goals, and new curriculum; and, (3) new organization, new program, and new methodology.

Process of Changing -- Change theorists have identified five models or processes of changing. The traditional model of changing was a problem-solving model of changing. Essentially, this model was concerned with the process of change which went on inside the user. The second process model of change, the research model, was a more formal and systematic process approach to change. It developed because many theorists and practitioners believed that schools and school districts had common problems. This process model of change had four phases - one of research, one of development, one of diffusion, and, one of institutionalization. The third process model of change, the social interaction model, presented a different perspective on the process of changing. Proponents of this model disagreed with the basic assumptions underlying the research model and believed that the user population was not passive and could not be shaped by the process of dissemination itself. Instead, they argued that innovations were institutionalized in a school because of the workings of the social interaction network within the school. This model focused on the user of the change rather than on the development of change products. The fourth process model of change was that of a linkage process model of changing. This model selectively incorporated and synthesized some of the phases and strategies of the other three models. It focused initially on the user of the change as a problem solver, then subsequently focused on linking the user to outside resources and setting up reciprocal relations with each. The final model of change, the organizational development (OD) model, adapted from the business and government OD models of the 1950's formally incorporated and synthesized the theories of the other processes. Primarily, this model viewed schools as organizations and innovations as change in the organization of the school. OD theorists viewed organizational change as change in the roles, authority structure, division of labor, and goals of the organization.

Agents of Change -- Change theorists believed that there were four kinds of roles which could be assumed by the agent of change. The agent of change was seen either as a technical consultant, process consultant, educational researcher, or school administrator. If the agent of change was seen as a technical consultant, his role was viewed as similar to that of a project manager. If the agent of change was seen as a process consultant, his role was viewed as similar to that of an organizational facilitator. If the agent of change was seen as an educational researcher, his role was viewed as similar to that of a project scientist. If the agent of change was seen as an educational administrator, his role was viewed as similar to that of an instructional leader.

Mediating Variables -- Mediating variables were those variables which could be introduced, developed, manipulated, or controlled by the agents of change. They were causal or "stimulus" variables which were thought to be capable of affecting, positively or negatively, the successful institutionalization of change. Mediating variables consisted of three different types of variables. The first type was viewed as attributes of the kinds of change. The perceived relative advantage, trialability, observability, simplicity, compatibility, and ease in adoption were the most commonly described attributes of a change. The second type was viewed as attributes of the process of change. The degree of equalized power, flexibility, user participation, user accountability, useful user training, collective decision making, sufficient assistance, available feedback, available research findings, clearly specified objectives, user involvement, and available needed resources were the most commonly described attributes of the process of changing. The third type was viewed as attributes of the agent of change. Support for user's attempts to adopt, concern for user's attitude about the change, concern for providing information and/or assistance to the user, concern for spending sufficient time with the user, and concern for promoting a facilitative and problem solving environment were the most commonly described attributes of an agent of change. All of these variables were studied in relation to the institutionalization of MUS-E.

Intervening Variables -- Intervening variables, like mediating variables, were believed to affect the institutionalization of a change. Unlike the mediating variables, however, the intervening variables existed a priori to the change program and could not be easily or quickly introduced, developed, manipulated or altered by the agents of change. Intervening variables consisted of three types of variables. The first type was viewed in relation to the formal organizational variables at the school, school district, or community level. At the school/school district level, decentralization of decision making, low formalization, high complexity, availability of sufficient funds, accountability of individuals, two-way communication channels, job specialization, job freedom, sufficient allotted time for meetings, and integrative communication links were the most commonly described intervening variables. At the community level, congruent value systems, high public interest in education, cosmopolitan population, effective local government, and willingness to pay for education were the most commonly described intervening variables. The second type was viewed in relation to the informal organizational variables at the school or school district level. An integrative communication network, high staff cooperation and cohesion, high administrative support to work with educational programs, high staff feeling of power in influencing the goals and policies of the school district, and open environment were the most commonly described intervening variables. The third type was viewed in relation to the individual variables of the administrator or user of the change. For the administrator, professional mobility, achieved status in system, persuasiveness, graduate education, interest and activity in professional meetings, feeling of security and reliance on outside information were the most commonly described intervening variables. For the user, moderate educational experience (between three and twenty years), graduate education, achieved status in the system, high achievement orientation, tolerance and acceptance of change, feeling of individual power in influencing the policies and programs of the school/school district, tolerance of ambiguity, acceptance of taking risks, and acceptance of group work were the most commonly described intervening variables. All of these variables were studied in relation to the institutionalization of MUS-E.

CHAPTER II

THE PROBLEM AND DESIGN OF THE STUDY

The design for this study followed a standard research study format. A statement of the problem was developed and hypotheses and ancillary questions were established about the relationship of certain selected variables of change to the institutionalization of the organizational component of the multiunit school (MUS-E). Several descriptive organizational change questionnaires were designed to measure respondents perceptions about the nature of the change process and test the research hypotheses and questions. These questionnaires were distributed to a selected sample of unit teachers, unit leaders, principals, district coordinators, and superintendents in multiunit elementary schools and school districts across the country. Before the questionnaires were distributed they were judged for content and format construct validity and piloted for determination of their reliability estimates.

When the questionnaires were returned, the questionnaire items were scored and transformed, and four analyses were performed on the data. First, reliability estimates were obtained on the items alone, on the items in clusters (as identified a priori), and on each questionnaire. Second, a factor analysis with axis rotation was run on the data to identify those variables which tended to cluster together to form distinct, common underlying factors affecting successful institutionalization of the organizational component of the multiunit school. Third, a stepwise multiple regression analysis was run on the factored or extracted variables to identify the amount of variance which could be attributed to the identified combinations of variables in predicting successful institutionalization. And, fourth, a one way analysis of variance was run on several variables related to the individual nature of the respondents. Each of these steps in the design of the study will be described in greater detail in the following sections of this chapter and chapter III.

PURPOSE OF THE STUDY

The purpose of this study was to: (1) identify some of the variables and critical clusters of the variables of change which were directly involved in the successful institutionalization of the organizational component of the multiunit elementary school; and, (2) begin to identify those elements of change which might be implicitly involved in the successful institutionalization of educational change in general. The following hypotheses were examined:

(1) There is no relationship between the perceived existence of the mediating variables of the organizational component and the degree to which the organizational component is successfully institutionalized.

(2) There is no relationship between the perceived existence of the mediating variables of the process of changing and the degree to which the organizational component is successfully institutionalized.

(3) There is no relationship between the perceived existence of the mediating variables of the agents of change and the degree to which the organizational component is successfully institutionalized.

(4) There is no relationship between the perceived existence of the intervening, formal organizational variables and the degree to which the organizational component is successfully institutionalized.

(5) There is no relationship between the perceived existence of the intervening, informal organizational variables and the degree to which the organizational component is successfully institutionalized.

(6) There is no relationship between the perceived existence of the intervening, individual variables and the degree to which the organizational component is successfully institutionalized.

The following ancillary questions were investigated:

(1) What is the relationship between each mediating variable of the organizational component and the degree to which the organizational component is successfully institutionalized.

(2) What is the relationship between each mediating variable of the process of changing and the degree to which the organizational component is successfully institutionalized.

(3) What is the relationship between each mediating variable of the agents of change and the degree to which the organizational component is successfully institutionalized.

(4) What is the relationship between each intervening, formal organizational variable and the degree to which the organizational component is successfully institutionalized.

(5) What is the relationship between each intervening, informal organizational variable and the degree to which the organizational component is successfully institutionalized.

(6) What is the relationship between each intervening, individual variable and the degree to which the organizational component is successfully institutionalized.

The definition of terms critical to this study are as follows:

(1) Mediating variables are manipulable variables believed to hinder or facilitate the successful institutionalization of the organizational component of the multiunit elementary school.

(2) The facilitative, mediating variables of the organizational component of the multiunit elementary school are the component's perceived: (1) relative advantage in aiding instructional programming; (2) simplicity; (3) Compatibility with user, staff, school district, and community; (4) trialability; (5) observability; and, (6) ease in adoption.

(3) The facilitative, mediating variables of the process of changing are the perceived existence of: (1) equalized power; (2) user accountability; (3) user participation; (4) useful user training; (5) collective decision-making; (6) sufficient assistance; (7) available research findings; (8) available feedback mechanisms; (9) clearly specified objectives; (10) user involvement; (11) available needed resources; and, (12) problem solving meetings scheduled when needed.

(4) The facilitative, mediating variables of the agents of change are the perceived existence of the agents': (1) support for the user in helping him to adapt to the requirements of the organizational component; (2) concern for the

user's attitudes towards the organizational component; (3) concern for demonstrating and providing information about the organizational component; (4) concern for spending sufficient time with the individual user; (5) concern for developing a facilitative and problem-solving environment, and, (6) concern for encouraging and supporting user to experiment with organizational component requirements.

(5) Intervening variables are less easily manipulable variables believed to hinder or facilitate the successful institutionalization of the organizational component even when the mediating variables of the organizational component, process of changing, and agents of change are qualitatively maximized.

(6) At the school district and school building level, the facilitative, intervening, formal organizational variables are: (1) decentralization of decision-making; (2) low formalization; (3) high complexity; (4) accountability of individuals; (5) availability of sufficient funds; (6) two-way communication channels; (7) job specialization; and, (8) freedom of individuals to control jobs.

(7) At the school building level, the facilitative, intervening, formal organizational variables are: (1) sufficient allotted time for instructional unit and administrative unit meetings; (2) staff heterogeneity; (3) high individual and collective faculty accountability; and, (4) integrative communication links.

(8) At the community level, the facilitative, intervening, formal organizational variables are: (1) congruent community value systems; (2) a homogeneous population; (3) a high public interest in education; (4) a cosmopolitan population; (5) an effective local government; and, (6) a willingness to pay for educational programs.

(9) At the school district and school building level, the facilitative, intervening informal organizational variables are: (1) an integrative, communication network; (2) high staff cooperation; (3) high administrative support and encouragement for working with changes; (4) a

high staff feeling of power in helping to determine educational goals and policies; (5) high staff cohesion; and, (6) an open environment.

(10) The facilitative, intervening, individual variables of an administrator involved in working with the multiunit program are variables associated with an administrator's: (1) professional mobility; (2) achieved status and influence in the system; (3) persuasiveness; (4) graduate education; (5) high interest and activity in professional meetings and associations; (6) high feeling of security; and, (7) high awareness of recent developments in education.

(11) The facilitative, intervening, individual variables of a user are the variables associated with a user's (1) length of teaching or administrative experience (i.e. - not more than twenty years); (2) low tenure in the system; (3) graduate education; (4) high achievement orientation; (5) tolerance and acceptance of change; (6) acceptance of autonomy; (7) tolerance and acceptance of ambiguity; (8) high feeling of individual power in helping to determine educational programs and policies within the school or school district; (9) acceptance of taking risks; and, (10) acceptance and liking for sharing job techniques with others.

(12) The degree of successful institutionalization of the organizational component of the multiunit elementary school program is measured by the mean of the perceptions (of the relative advantage of the organizational component in aiding instructional programming) of the respondents to the questionnaires.

THE POPULATION AND SAMPLE

The unit of investigation for this study consisted of all the multiunit elementary schools in the United States which had begun the implementation of the organizational component of the multiunit system in 1970-71. A list of the schools and school districts satisfying this criterion was obtained from the 1971-72 Multiunit School District Directory (Madison, Wisconsin: Wisconsin Research and Development Center for Cognitive Learning, 1972). Altogether, 349 schools in 214 school districts satisfied this criterion. Since the aim of the study was to develop a change model applicable to many schools and school districts, schools from all the school districts were included in the study.

The population of multiunit schools included: (1) schools from fourteen states (California, Colorado, Connecticut, Illinois, Indiana, Massachusetts, Minnesota, Nebraska, New Jersey, New York, Ohio, South Carolina, Virginia, and Wisconsin.); (2) schools from most geographical areas except the Deep South and Southwest; (3) schools from rural, suburban and urban areas; and, (4) schools from communities of varying size, wealth, government, and occupation. (See Appendix A for a list of the population and sampled school districts.) Although the population of multiunit schools is not statistically representative of the total population of schools across the country, it was believed that the population of multiunit schools was characteristic of many different kinds of schools, school districts, and school communities at varying levels of institutionalization of MUS-E. As such, there is some support for generalizing from the findings about innovation in multiunit schools to innovation in the population of schools across the United States.

The respondent population for this study consisted of all those individuals who had been involved directly in the institutionalization of the organizational component of the multiunit programs since 1970-71. Five types of respondents were involved: unit teachers, unit leaders, school principals, district coordinators, and superintendents. The positions for unit leaders and district coordinators were specifically created by the multiunit program.

Since the population of respondents was believed to be too large for inclusion in the study, a sample of respondents was selected from each school district. The number of respondents selected from each district varied with the number of multiunit schools in the district; districts with two or more multiunit schools had more respondents than districts with only one multiunit school. In general, the superintendent and district coordinator (if the position existed) from each school district were included in the study while six unit teachers, two unit leaders, and one school principal were selected from school districts with one multiunit school. Twelve unit teachers, four unit leaders, and two school principals were selected from school districts with two, three, or four multiunit schools. This ratio of six unit teachers, two unit leaders, and one school principal was kept constant for school districts with more than four multiunit schools; but, the numbers sampled varied with the amount of cooperation from the school district.

Of the 214 school districts in the population, 166 school districts (78% of the population) agreed to and actually did participate in the study. Of the 214 school districts in the population; 166 (78%) agreed to and did participate in the study, 21 (10%) indicated that they would like to participate but did not feel that their multiunit schools possessed the characteristics requested for the study, 14 (6%) refused to participate in the study and 13 (6%) agreed to participate but did not return the questionnaires. Of the 349 schools in the population, 206 schools (59% of the population) agreed to and actually did participate in the study. (See Table I for the exact figures on the population and sample of schools and school districts.) These figures were assumed to be large enough to support generalization from the sample to the population of multiunit schools and school districts.

TABLE I

STUDY POPULATION AND SAMPLE OF
SCHOOL DISTRICTS AND SCHOOLS

	Population	Pilot Sample	Study Sample	Total Sample	% of Population
Number of School Districts	214	20	146	166	78%
Number of Schools	349	26	180	206	59%

Instrumentation and Pilot Study

Instrument Content -- The instruments used in this study were descriptive change questionnaires. (See Appendix B for the final questionnaires.) Five different questionnaires were developed for the five different respondent groups: unit teachers, unit leaders, principals, district coordinators, and superintendents. Essentially, all the questionnaires were similar in that they measured (when applicable), the relationship of the major variables of change (identified in the literature review) to the institutionalization of MUS-E. (See Figure I for a list of the specific variables measured by these questionnaires.) The questionnaires differed in that the referent points (i.e. instructional unit level for unit teacher, administrative unit level for unit leader, school building level for principal, and school district level for district and superintendent) for each respondent group varied.

I. Categories of Variables

   A. Mediating variables
   B. Formal intervening variables
   C. Informal intervening variables
   D. Individual user variables

II. Mediating Variables of Change

   A. Facilitative mediating variables of the organizational component itself

      1. Relative advantage
      2. Compatibility with individual user and others (colleagues, subordinates, other district personnel, school board members and community)
      3. Simplicity
      4. Trialability
      5. Observability
      6. Ease in adoption

   B. Facilitative mediating variables of the process of changing

      1. Equalized power
      2. User participation
      3. User accountability
      4. Useful user training
      5. Collective decision making
      6. Sufficient assistance
      7. Available feedback mechanisms
      8. Available research findings
      9. Clearly specified objectives
      10. Available needed resources
      11. User involvement
      12. Problem solving meetings scheduled when needed

   C. Facilitative mediating variables of the agents of change

1. Support for user's attempts to adapt to the organizational component
2. Concern for user's attitude about the organizational component
3. Concern for providing information and/or assistance to the user
4. Concern for spending sufficient time with the user to help him adapt to the organizational component
5. Concern for promoting a facilitative and problem solving environment
6. Concern for encouraging and supporting user to experiment with organizational component requirements

III. Formal Intervening Variables of Change

- A. Facilitative intervening variables at the school district and school building level
    1. Decentralization of decision making
    2. Low formalization
    3. High complexity
    4. Availability of sufficient funds
    5. Accountability of individuals
    6. Two-way communication channels
    7. Job specialization
    8. Freedom of individuals to control own jobs
- B. Facilitative intervening variables at the school building level
    1. Sufficient allotted time for meetings
    2. Integrative communication links
- C. Facilitative intervening variables at the community level
    1. Congruent value systems
    2. High public interest in education
    3. Cosmopolitan population
    4. Effective local government
    5. Willingness to pay for educational programs

IV. Informal Intervening Variables of Change

- A. Facilitative intervening variables at the school district or school building level

1. Integrative communication network
2. High staff cooperation
3. High staff cohesion
4. High administrative support and encouragement to work with educational programs
5. High staff feeling of power in helping to determine educational goals and policies
6. Open environment

V. Individual Intervening Variables of Change

  A. Facilitative intervening variables of administrators

    1. Professional mobility
    2. Achieved status and influence in the system
    3. Persuasiveness
    4. Graduate education
    5. High interest and activity in professional meetings
    6. Feeling of security
    7. High awareness of recent developments in education

  B. Facilitative intervening variables of individual users

    1. Moderate teaching experience (not more than 20 years and not less than 3 years)
    2. Low tenure in system
    3. Graduate education
    4. Achieved status in the system
    5. High achievement orientation
    6. Tolerance and acceptance of change
    7. Feeling of individual power in helping to determine educational policies and programs in the school or school district
    8. Acceptance of group work
    9. Acceptance of taking risks

Figure 1. VARIABLES OF CHANGE MEASURED BY THE ORGANIZATIONAL CHANGE QUESTIONNAIRES

All the items on the questionnaires were eventually written in either Likert format (scaled ratings of 1-5) multiple choice, or blank completion format. Initially only scaled items (rated 1 - Strongly Agree, 2 - Agree, 3 - Neither Agree nor Disagree, 4 - Disagree, and 5 - Strongly Disagree), designed to measure the individual respondent's perception or judgement as to whether that variable was involved in the institutionalization of the MUS-E, were used. The multiple choice items and blank completion items were added to the questionnaires after the pilot study. They were designed to obtain a better description of certain important variables of change already rated in the set of scaled items. (See Figure 2 for a list of the variables measured by these items.)

I. Categories of Variables
    A. Mediating variables
    B. Formal intervening variables
    C. Informal intervening variables
    D. Individual user variables

II. Mediating Variables
    A. Amount and kind of user involvement in setting up the MUS-E
    B. Kind of innovations user encouraged to experiment with
    C. Amount of time agents of change spend with users

III. Formal Intervening Variables of the School District and School Building Level

A. Kinds of activities which have established rules and procedures
B. Number and kind of supportive services
C. Degree of opportunity provided user for participating in decision making
D. Kind of input user allowed to make in decision-making
E. Kind of communication exchange used

IV. Informal Intervening Variables at the School District or School Building Level

A. Kind of communication exchanges used
B. Kind of cooperation developed by staff
C. Amount of time superordinate allows subordinates to spend with him

V. Individual User Variables

A. Degree of achievement orientation
B. Amount of education
C. Degree of tolerance of innovations
D. Degree of willingness to experiment with innovations
E. Years of teaching and/or administrative experience in school district
F. Years of total teaching and/or administrative experience in all school districts

Figure 2. VARIABLES OF CHANGE MEASURED BY THE MULTIPLE CHOICE AND BLANK COMPLETION ITEMS ON THE QUESTIONNAIRES

Instrument Development -- Since the instruments were: (1) designed specifically for this study; (2) multi-factored (including many variables of change); and, (3) concerned with measuring individual perceptions - elaborate procedures were used to ascertain the reliability and validity estimates of the instruments. The validity estimate of each questionnaire was determined before the questionnaires were distributed to the final study sample. Because it was statistically impossible to obtain predictive validity estimates for the questionnaires, format and construct validity estimates alone were ascertained from carefully selected respondents. Validity estimates were defined in verbal terms and were analyzed in several stages. Because it was difficult to get the respondents to react to five questionnaires, only the unit teacher questionnaire was used in this process. Since the questionnaires were judged to be similar in variables and format, it was assumed that needed revisions in the unit teacher questionnaire represented needed revisions in the other questionnaires. Items (judged similar) which were dropped, reworded, or reworked on the unit teacher questionnaire also were revised on the other questionnaires.

In the first step, a general estimate of the format and construct validity of the questionnaires (taken globally) was ascertained with the help of twenty-six graduate students in the Organizational Behavior Class (Fall Term,

1972) of the University of Wisconsin Department of Educational Administration. Many of these students had been teachers or administrators in schools across the country so it was assumed that they would be similar to many of the actual respondents to the questionnaires. Students were asked to: (1) delete those questions thought to be unnecessary or unrelated to the institutionalization of innovations; (2) rewrite those questions thought to be vague or poorly phrased; and, (3) combine those questions thought to be redundant. All questions which were deleted by more than 50% of the students were deleted from the questionnaire, and, all questions which were questioned by more than 20% of the students were re-analyzed and revised and/or rewritten.

In the second step, a jury of twelve multiunit researchers, practitioners, or evaluators were asked to judge the content construct validity of the newly modified unit teacher questionnaire. Four of these individuals were members of the Individually Guided Education (I.G.E.) Implementation Team at the Wisconsin Research and Development Center and had been unit leaders or school principals in multiunit schools in Wisconsin. Three of these individuals were or had been members of the Wisconsin State Department of Instruction's I.G.E. evaluation team and, five of these individuals were professors in the University of Wisconsin's Department of Educational Administration and were involved in research, design, or evaluation of varied components of the I.G.E. program. As before, the jury members were asked to delete, rewrite, or combine items on the questionnaire. In addition, they were asked to suggest items not included on the questionnaire which they thought related to the institutionalization of change programs in general or the MUS-E component in particular. They were provided with a list of the variables which were included in the questionnaires. Questions which were deleted, rewritten, or combined by two or more individual members of the jury were re-analyzed and/or deleted. Only questions which were judged by nine or more members of the jury to have "construct" validity were retained.

After the second step, the questionnaires were piloted in 26 schools and 20 school districts in Wisconsin. From the findings on the reliability estimates of the questionnaires (see the section on the pilot study), further construct validity development was judged necessary.

In the third step, another jury of fifteen organizational theorists and students were asked: (1) to judge the construct validity of the pilot unit teacher questionnaire, and (2) to critique a list of change variables which were used in the questionnaire. Two of these individuals were professors in the University of Wisconsin's School of Business who were involved in organizational development research and thirteen of these individuals were graduate students in the Organizational Development Seminar (Spring 1973) of the University of Wisconsin School of Business. Many of these individuals were or had been administrators in non-profit and profit organizations. As a result of this step, three additional change variables were added to the questionnaires and ten items were rewritten in a different format. Instead of all the items being written in a Likert scale framework, a few (judged very important) were rewritten in a multiple choice format. The jury of organizational theorists thought that more descriptive information about a particular variable could be obtained with multiple choice rather than Likert scaled items.

In the fourth step, five individuals (a member of the I.G.E. Implementation Team, a professor in the School of Business, and three professors in the Department of Educational Administration) who had seen the pilot versions of the questionnaire were shown the latest version. They commented globally on the format, item construction and list of change variables provided to represent the items included in the questionnaire. Six of the newly formed items were rewritten to reflect the situation in a multiunit school. All the other items on the questionnaire were accepted by four or more of these individuals; the other four questionnaires were rewritten; and the questionnaire(s) were ready for the final study.

Pilot Study - The reliability estimates of the questionnaires and further refinement of the construct validity (described earlier) of the items on the questionnaires were ascertained in a pilot study. In this study, the five organizational change questionnaires were sent to 20 selected school districts and 26 schools in Wisconsin. Altogether, 263 questionnaires were sent out and 216 questionnaires (82%) were returned. (See Table II for the exact breakdown in the rate of return for each of the five questionnaires.)

In order to ascertain the reliability estimates of the questionnaires, Program TSTAT (developed by Dennis W. Spuck for the Wisconsin Information Systems for Education) was used. Program TSTAT provided item and scale analyses for forced choice answer scales. It computes alpha-coefficients of internal consistency (inter-item homogeneity) for identified scales and item correlation coefficients with scale and total test. Program TSTAT was used because the questionnaires were designed with different factors or clusters of items, which taken together were believed to define a common factor, the institutionalization of MUS-E. Alpha-coefficients were calculated to attain a measure of each cluster's (scale) consistency with the total test. As such, the index of each scale's alpha coefficient indicated what proportion

TABLE II

ORGANIZATIONAL CHANGE QUESTIONNAIRE: RATE OF RETURN FOR THE PILOT SAMPLE BY RESPONDENT GROUP

RESPONDENT GROUP	NUMBER OF QUESTIONNAIRES SENT OUT	NUMBER OF QUESTIONNAIRES RETURNED	PER CENT OF QUESTIONNAIRES RETURNED
UNIT TEACHER	150	116	77
UNIT LEADER	58	49	84
SCHOOL PRINCIPAL	26	23	88
DISTRICT COORDINATOR	11	11	100
SUPERINTENDENT	18	17	94
TOTAL (ALL GROUPS)	263	216	82

of the variance of the composite of all the factor was due to common factors (institutionalization of MUS-E) among the scales of the test. A similar measure of inter-item reliability was applied to relate each item to its cluster (scale) and each item to the total test. A test was interpretable only if it was found to have substantial internal consistency, i.e., with an alpha > .79[276].

Program TSTAT was used for all five questionnaires, but it was only analyzed statistically for the unit teacher questionnaire where the number of respondents (116) was thought to be large enough for statistical analysis and interpretation. Measures obtained for the other four questionnaires were viewed descriptively and were used as additional information when the items on these questionnaires (as they related to the items on the unit teacher questionnaire) were re-analyzed for the final study.

In the analysis of program TSTAT's reliability estimates for the unit teacher questionnaire, items which had a correlation coefficient of less than .50[276] either with their assumed subscale or with the total questionnaire and scales which had an alpha coefficient of less than .50 with the total questionnaire were re-analyzed. Items were to be removed and scales were to be re-organized if in the re-analysis: (1) it was judged that the literature did not empirically support their inclusion; and, (2) it was thought that the variables themselves did not uniquely contribute to the understanding of the institutionalization of the MUS-E. Altogether, 43 items (of the 100 item test) and four scales needed to be re-analyzed. (See Table III for the alpha coefficients for the subscales and total questionnaires.)

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[276] Among educational researchers, it is common consensus to use these cut-off points for interpretability of questionnaires and relationships of items and factors.

Before the items or scales were revised, the items were separated into their scales since it was thought that there was a relationship between an item with a low coefficient and that item in a scale with a low coefficient.

When the items were separated by scales, 9 items were found to be in scales I-IV and VIII, and 34 items were found to be in scales V-VII and IX. Since the 9 items in scales I-IV and VIII were in scales with alpha coefficients $> .75$, and since it was judged that: (1) they did not add significantly to the error variance for their scale; and, (2) they were uniquely important to the understanding of the institutionalization of MUS-E, they were not dropped from the questionnaire. Since the 34 items in scales V-VII and IX were in scales with alpha coefficients $< .50$, both the items and scales were re-analyzed. Seven items (representing five variables: the heterogeneity of the school building or school district staff, the geographical background of the school or school district staff, the homogeneity of the community, user's acceptance of autonomy, and user's acceptance of ambiquity) were dropped from the questionnaire since it was judged

TABLE III

PILOT STUDY UNIT TEACHER QUESTIONNAIRES: ALPHA COEFFICIENTS FOR THE NINE SUBSCALES AND TOTAL TEST

SUBSCALE NAME	ALPHA COEFFICIENT
I. Degree of Institutionalization of MUS-E	.8949
II. Mediating Variables of MUS-E Itself	.7833
III. Mediating Variables of Process of Changing	.7595
IV. Mediating Variables of Agents of Change and Administrators	.8850
V. Formal Intervening Variables at School District Level	.4991
VI. Formal Intervening Variables at School Level	.2058
VII. Formal Intervening Community Variables	.4953
VIII. Informal Intervening Variables at School and School District Level	.7629
IX. Individual Intervening User Variables	-2.7723
X. Total Test	.9235

that they did not fulfill either of the two conditions described above. Eleven items were combined with other related items and sixteen items were written in a multiple choice format. All four scales were reorganized with the introduction of new variables in multiple choice format. It was thought that the re-organization of the questionnaire would improve both its construct validity and internal consistancy.

Since the over-all alpha coefficient for the unit teacher questionnaire was .9235, and since the over-all alpha coefficients for the other four questionnaires were between .5420 and .9445, it was thought that the reliability of each questionnaire was high enough to be useful in understanding the institutionalization of the MUS-E in particular and innovations in general.

Data Gathering Procedure

The procedures followed in gathering data for the study were similar in both the pilot and final sample. Initially, the superintendent of each school district was sent a package of information about the study and a letter requesting permission to include his school district and multiunit school(s) in the study. The letter described: (1) the nature and focus of the study;

(2) the procedures to be followed in obtaining the data; (3) the criteria for selecting school district personnel to participate in the study; and, (4) the number of respondents desired for each group. The number of respondents for each school district were determined before hand according to the procedures specified in the population section. An abstract of the study and a sample (unit teacher) questionnaire were also included in the package of material so that the superintendent's decision as to whether to participate in the study or not would be facilitated.

In the pilot study, all the superintendents were phoned a week after they were to have received the request and asked whether they were willing to allow their district to participate in the study. Additional information also was received at this time (i.e., whom to send the questionnaires to for distribution).

In the final study a post card was included with the material so that the superintendent (or his designate) could respond to the request for assistance by merely filling out a card as to: (1) whether the school district was willing or unwilling to participate in the study; and, (2) whom to send the questionnaires to for district-wide distribution. (See Appendix C for a copy of the letter and study abstract sent to the superintendent.)

In the final study, all school districts not returning the post card within two weeks were phoned and the superintendent (or his designate) was asked about the willingness of his school district to participate in the study. In some cases the superintendent agreed to participate, but changed the number of questionnaires to be used. In other cases, he indicated that he could not compell the schools in his district to participate and that it would be better to call the principals of the schools (meeting the criteria for the study) directly. These suggestions were followed, so two or more distribution centers (school district and school building) were often arranged for one school district. In some cases, (i.e. in larger school districts), the superintendent indicated that the office of research (department of curriculum development, etc.) was reviewing the questionnaire and would return the post card and handle the distribution (if there was one).

When the information for each school district was received, the number of specified questionnaires were packaged for distribution. Each individual responsible for distributing the questionnaires was sent a cover letter explaining the procedure and criteria for selecting respondents to fill out the questionnaires. Each questionnaire had a cover letter describing the nature and focus of the study and a self-addressed return envelope. (See

Appendix C for a copy of a respondent's cover letter.) Cover letters were addressed by name to principals, district coordinators, and superintendents; but not to unit teachers and unit leaders. A return envelope was included with each questionnaire because it was thought that it would: (1) expedite matters for the person distributing questionnaires; (2) ensure confidentiality for the respondents; and, (3) encourage honest responses.

The degree of school district participation and the rate of return of the questionnaires reflect the personalized procedures used in gathering the data. Of the 214 school districts in the population; 166(78%) agreed to and did participate in the study, 21 (10%) indicated that they would like to participate but did not feel that their multiunit schools possessed the characteristics requested for the study, 14 (6%) refused to participate in the study and 13 (6%) agreed to participate but did not return the questionnaires. The degree of participation was standard for survey questionnaires and was high enough to reflect adequate representation of the population.

In terms of the rate of return of the questionnaires in the pilot study, 216 (82%) of the 265 distributed questionnaires were returned. In the final study, 1251 (61%) of the 2034 distributed questionnaires, were returned. (See Table IV for a return rate for the two studies.) It

TABLE IV

ORGANIZATIONAL CHANGE QUESTIONNAIRE: RATE OF RETURN FOR PILOT AND STUDY BY RESPONDENT GROUP

Name of Study	Unit Teacher	Unit Leader	Principal	District Coordinator	Superintendent	Total Respondents
SENT	150	58	26	11	18	265
RETURNED	116	49	23	11	17	216
% PILOT	77%	84%	88%	100%	94%	82%
*	*					
SENT	1198	393	180	119	145	2034
RETURNED	688	258	121	78	107	1251
% FINAL	58%	66%	67%	66%	74%	61%

was noted that the individuals contacted personally (i.e., phoned or written to) were more likely to fill out and return the questionnaires than those referred to as "Dear Unit Teacher." Also, it was noted that individuals higher in the school district hierarchy (i.e. - superintendent and principal) were more likely to fill out and return the questionnaires than those individuals lower in the school district hierarchy. The rate of return for the questionnaires was adequate enough to allow for their representation of the total number of individuals sampled.

Scoring, Coding and Transforming of Data

Before the data from the questionnaires could be statistically analyzed, several data preparation procedures had to be followed. The same procedure was followed for both the pilot and final study although some of the analyses were performed only on the final study data. First, when each questionnaire was returned by the respondent, it was scanned for spurious markings and comments. The spurious markings were cleaned up and the comments were recorded. Second, each questionnaire was assigned an identifying number, a number for respondent type, and codes for some of the blank completion items in the personal data section. Codes were assigned for the name of the school district, the number of years the respondent had been teaching or working in the school district, the number of total years the respondent had been teaching or working in any school district, the amount of education received by the respondent, and the degree of achievement aspiration of the respondent. These items were not treated in the main part of the study, but they were analyzed separately to see if differences between respondents in these items were related to differences in how respondents viewed institutionalization of MUS-E.

When these two steps were completed, the item responses on the questionnaire were keypunched on computer cards. The Likert scaled responses were keypunched as they were circled on the questionnaire; the multiple choice responses were keypunched "1" if the response choice was checked and "0" if it was not (any combination of the multiple choice responses could be checked), and the blank completion responses were keypunched as coded.

Before the keypunched data could be assimilated by the computer programs, it had to be transformed into a form both easier to work with and more reflective of the design of the study. All of the transformation procedures were designed by the author and members of the Wisconsin Research and Development Center computer staff. First, the data on the cards was transferred into image arrays in files, as files were easier to work with when additional transformations and analyses were to be performed. Second, the items in the files were re-ordered since like items (as partially defined by the pilot study and a priori review of the literature) were more easily analyzed and used in format statements if they were grouped together. The items had been initially scrambled on the questionnaires to attain more accurate perceptions from the respondents. It was thought that individuals (to be seen as consistent) often answered questions in the same way when the items were placed in serial order and related in concept and that these responses were not reflective of the respondent's true perceptions. Third, some of the items on the files were reversed from a negative statement and scale to a positive statement and scale. Items had been reversed and described negatively on the questionnaires to make sure individuals read the question before marking answers. In all of these changes, basic system procedures, as defined by the Academic Computing Center, were followed.

In the fourth step, the data was transformed using the "STATJOB Transformation Procedures" as defined by the Academic Computing Center. The multiple choice items were transformed from their "0", "1" format to the same Likert scale as used by the Likert items. Initially, each of the response sets in a multiple choice item had been designed linearly so that they could be converted to a Likert scale later. Since more than one response could be checked for each item, combinations of responses were also assigned a specific Likert scale. Although some judgement was involved in assigning combinations of responses to specific Likert scales, the basic assumption (that responses were linearly arranged) was not violated. Responses were assigned increasing weights and combinations of responses reflected the additive weights of their initial weights. When the multiple choice items were transformed, additional information and additional observations were obtained about the relation of important variables of change and the institutionalization of MUS-E.

In the final step, the codes for the blank completion items were renamed and clustered into fewer but related groups so that analyses of variance could be performed later. Although judgements were made about group placement, group membership was determined through a priori concepts defined by those variables. The responses about an individual's educational level, number of years teaching or working in a school district, total number of years teaching or working in schools, and achievement aspirations were all grouped accordingly.

Description of the Statistical Analyses Performed on the Data

Five statistical analyses were performed on the data from this study. All of these analyses were performed by pre-packaged programs available at the University of Wisconsin Academic Computing Center. TSTAT, as described earlier, was used in the estimation of the internal consistency of factors, to the total questionnaire, the correlation of individual items to individual factors (a priori specified) and the entire questionnaire and the internal consistency of the entire questionnaire. The TSTAT estimates for the final study will be reported in the next chapter. High TSTAT estimates are needed if:

(1) the findings are to be viewed as useful in relating items on the questionnaire to the institutionalization of MUS-E; and, (2) the factors delineated by factor analysis can be compared with the a priori factors to see if a framework for viewing this institutionalization of MUS-E can be developed.

DSTAT2, a descriptive statistical program, was used in obtaining measures of the mean, the standard deviation, the variance, and the maximum and minimum values of the responses for each item. Although these measures were not directly reported in this study, they were used to help the researcher understand the item's characteristics when it was isolated and/or otherwise analyzed in other programs.

FACTOR2, a principle component factor analysis program (with orthogonal rotation), was used to identify those variables (items on the questionnaires) which tended to cluster together to form distinct, common underlying factors affecting the successful institutionalization of MUS-E. This technique was used because it determined common factors by extracting first the common factor accounting for the largest part of the variance in the correlation matrix; second, that common factor, uncorrelated with the first, accounting for the largest part of the remaining variance; and so on until all of the explainable variance in the correlation matrix was identified. An orthogonal varimax rotation was used in the analyses to help simplify the factored structure by defining distinct, clusters of uncorrelated variables. In the varimax rotations, Guttman's weak lower bound of .1 was used as a conventional cutoff point in extracting factors (i.e., those factors predicting more than 1 per cent of the variance of the total questionnaire).

Essentially, FACTOR2 was used to help prove or disprove the hypotheses of the study. The value of factor analysis in doing this has been discussed by Cattell. Cattell[277] believed that factor analysis was valuable because it could be used to: show how some variables could be grouped together; (2) show how strongly certain variables related to each other; (3) delineate new independent underlying factors which might be responsible for the groupings; and, (4) provide a measurement foundation for later refinement of the study. Not everyone, however, accepts the value of factor analysis. Recently, its value has been questioned by Armstrong and Soelberg[278] who carried out a review of factor analysis studies and found that 2/3 of the studies provided no measures of the identified factor's reliabilities and/or no a priori rationale for describing the factors which could be generated by the factor analyses. This study, however, has dealt with the objections raised by critics of factor analysis because it has provided (through its a priori factor model and TSTAT estimates of that model) an objective benchmark by which the results may be evaluated. The relationship of the factors prescribed by the a priori model and the factor analysis program will be described in depth in the next chapter.

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[277] Raymond B. Cattell, FACTOR ANALYSIS. New York: Harper and Brothers, Publishers, 1952, pp. 14-21.

[278] J. Scott Armstrong and Peer Soelberg, "On the Interpretation of Factor Analysis," PSYCHOLOGICAL BULLETIN, Volume 70, Number 5 (1968), pp. 361-363.

STEPREG1, a stepwise linear regression analysis program, was used to determine the set of variables which were the best determinants of the institutionalization of MUS-E. Essentially STEPREG1 was used to help answer the ancillary questions in the study. First, all the variables (items) in each questionnaire were entered as "free" variables in the regression model. The mean response on five or six variables (depending on the questionnaire) defined as measures of the institutionalization of MUS-E, was used as the estimate for the dependent variable for which the variance of the remaining items was predicted. All of the five or six items were a priori performance objectives of MUS-E. Second, the program computed a multiple correlation coefficient and coefficient of determination for all the variables in the model, and employed a backward selection technique to remove those variables which contributed least to the prediction of the dependent variable (institutionalization of MUS-E). Again, Guttman's cutoff value of .1 was used as a value for extracting variables. The free variables in the equation were selectively removed (or entered) from the equation until the amount of variance (coefficient of determination) explained by the variables being removed (or entered) was significant at greater than .10 level of significance. The program also provided one additional analysis to test the validity of the final regression model. A plot of standardized residuals (obtained by dividing the differences between the observed and computed values of the dependent variable by the standard error of estimate) was printed for each respondent. If the regression model was valid and if the error distribution was normal, the plot of standardized residuals were distributed as a t-distribution between -2 and +2. For a large number of observations ($N > 30$), this t distribution should be unit normal with about 95 per cent of the standardized residuals falling between -2 and +2.

The final analysis, DISCRIM1, a multivariate statistical analysis program, was used to identify item differences between discrete groupings of the respondents as they related to the institutionalization of MUS-E. This program, too, was used to answer ancillary questions in the study. The program performed a one-way analysis of variance on the a priori grouped respondents responses and the dependent variable (as defined in both the factor analysis and multiple regression programs). An F value and level of significance of the differences between the groups in relating to the dependent variable was computed for each item. If the differences between the groups were determined to be significant, the level of significance was to be $\geq .05$.

CHAPTER III

ANALYSES OF THE DATA

In this section the findings of four statistical analyses (TSTAT, FACTOR2, STEPREG1, and DISCRIM1) are presented. These findings provide a theoretical framework for rejecting or accepting the null hypotheses and answering the ancillary questions of the study. Whenever possible, an attempt has been made to organize the findings so that they can be viewed across all the questionnaires.

Program TSTAT -- Program TSTAT was used to determine the reliability and consequent utility of the questionnaires in the study. To attain the reliability measures for each questionnaire, three analyses were undertaken. For each questionnaire, a measure was obtained for the questionnaire's over-all internal consistency, each scale's (a priori factor) internal consistency with the questionnaire, and each item's correlation with its assigned scale and total questionnaire. Each one of these analyses provided a different estimate of the study's reliability.

The measure of each questionnaire's overall internal consistency (alpha coefficient) provided an estimate of the reliability of the questionnaire in accurately measuring the variables associated with the institutionalization of MUS-E. It was assumed that the underlying common factor for each questionnaire was prediction of the institutionalization of MUS-E. In general, the overall alpha coefficients for each of the questionnaires were high enough ($\alpha \geq .80$) to conclude that the questionnaires would be useful in dealing with the hypotheses and questions raised in the study. (See Table V for an exact description of the alpha coefficients for each questionnaire.)

TABLE V

INTERNAL CONSISTENCY MEASURES (ALPHA COEFFICIENTS) FOR EACH OF THE ORGANIZATIONAL CHANGE QUESTIONNAIRES

QUESTIONNAIRE TYPE	NUMBER OF RESPONDENTS	NUMBER OF ITEMS	α COEFFICIENT
UNIT TEACHER	688	74	.9472
UNIT LEADER	258	71	.9453
PRINCIPAL	121	69	.9125
DISTRICT COORDINATOR	78	66	.8717
SUPERINTENDENT	107	42	.8293

Although there were differences in the reliability estimates for each questionnaire, the findings of each questionnaire were judged to be equally useful in interpreting the relationship of items on the questionnaire to the institutionalization of MUS-E. Although it was acknowledged that the unit teacher, unit leader, and principal questionnaires (with alpha coefficients $> .90$) were more reliable, and thus potentially better measures of the institutionalization of MUS-E, it was assumed that the district coordinator and superintendent questionnaire (with alpha coefficients of .87 and .83 respectively) were also reliable instruments since their items were similar in concept and format to the first three questionnaires. In general, it was believed that the lower estimates for the district coordinator and superintendent questionnaires were more reflective of the fewer numbers of items on these questionnaires rather than a general unreliability of the questionnaires.

For each questionnaire, the measures of each scale's (a priori factor) internal consistency with the overall questionnaire provided an estimate of the relationship of the pre-specified factor to the institutionalization of MUS-E. For most of the a priori factors on each questionnaire, the scale coefficients were high enough ($\alpha \geq .40$) to conclude that some kind of relationship existed between the a priori factors and the institutionalization of MUS-E. Thus, to varying degrees (depending on the strength of the relationship) the a priori factors were judged to be useful in providing: (1) an objective benchmark for interpreting the factor analyzed factors; and, (2) partial support for rejecting or accepting the major hypotheses of the study.

The alpha coefficients for each a priori factor in each questionnaire are presented in Table VI. For ease in presenting these data, only the numbers of the items included in each scale, not the verbal description of the items, has been given. In order for Table VI to be interpreted accurately, three more tables of information (Appendices D, E, and F) need to be viewed. Appendix D provides a description of the concept measured by each factor and the number of the items included in each factor of each questionnaire. Appendix E provides a description of the concept measured by each of the items in each factor of each questionnaire. Appendix F provides a verbal description of each of the items as they appeared on each questionnaire. The numbers of the items in each Appendix and each table (if applicable) remain the same throughout the study.

When the alpha coefficients for similar factors were compared across each questionnaire, many similarities were found in the relative strength of these factors'

TABLE VI

INTERNAL CONSISTENCY MEASURES (α COEFFICIENTS) FOR EACH OF THE A PRIORI FACTORS ON EACH OF THE ORGANIZATIONAL CHANGE QUESTIONNAIRES

A PRIORI FACTOR	UT		UL		P		DC		S	
	Items	α	Items	α	Items	α	Items	α	Items	α
DV: Institutionalization of MUS-E	1-5	.6815	1-5	.6552	1-5	.3030	1-6	.4376	1-6	.6030
MV: MUS-E	6-13	.6071	6-13	.5512	6-14	.6248	7-14	.5398	7-14	.6164
MV: Process	14-27	.7805	14-27	.7500	15-28	.5908	15-28	.4890	15-23	.5236
MV: Unit Leader as Agent of Change	28-32	.4983								
MV: Principal as Agent of Change	33-36	.1790	28-34	.6531						
MV: District Coordinator as Agent of Change	37-42	.7065	35-40	.6394	29-34	.4185				
MV: Superintendent as Agent of Change					35-40	.3808	29-35	-.0682		
IV: Formal, School or School District	43-54	.7106	41-52	.7833	41-53	.7735	36-49	.5091	24-34	.5793
IV: Formal Community	55-58	.4949	53-56	.3388	54-57	.3650	50-53	.2365	35-38	.1367
IV: Informal School/ School District	59-69	.4560	57-61	.6183	58-60	.3293	54-56	.1099	39-41	-.3576
IV: Individual Principal	64-69	.5881	62-66	.5433						
IV: Individual Superintendent					61-65	.5366	57-61	.3381		
IV: Individual User	70-74	.5124	67-71	.2446	66-69	.2126	62-66	.3023	42-43	.3093
TOTAL TEST	1-74	.9472	1-71	.9453	1-69	.9125	1-66	.8717	1-43	.8293

KEY:
DV = Dependent Variables
UT = Unit Teacher
MV = Mediating Variables
UL = Unit Leader
DC = District Coordinator
IV = Intervening Variables
P = Principal
S = Superintendent

relationship to the institutionalization of MUS-E. When a factor was found to have a relatively consistent set of coefficients across questionnaires, it was thought that the factor was generally necessary to the institutionalization of MUS-E and change programs in general. However, when a factor was found to have a relatively inconsistent set of coefficients across questionnaires, it was thought that the factor was more useful for identifying a specific respondent group's understanding of the institutionalization of MUS-E than for understanding change programs in general.

The factors which were more consistently described were those factors defining the elements of MUS-E, the process of changing, the formal school/school district structure, the formal school community, the institutionalization of MUS-E, the district coordinator as an agent of change, the principal as an administrator and the individual user. On all five questionnaires, the factors defining the elements of MUS-E, the process of changing, and the formal school/school district structure had a moderate to moderately strong ($.80 \geq \alpha \geq .48$) relationship to the institutionalization of MUS-E. On four of the five questionnaires, the factor defining the degree of institutionalization of MUS-E had a moderate ($.70 \geq \alpha \geq .40$) relationship to the institutionalization of MUS-E. On four of the five questionnaires, the factors defining the formal community structure and the individual user's characteristics had a weak relationship ($\alpha \leq .40$) to the institutionalization of MUS-E. On all three questionnaires measuring that factor, the factor describing the district coordinator as an agent of change had a moderate to moderately strong relationship ($.80 \geq \alpha \geq .40$) to the institutionalization of MUS-E. And, for the two questionnaires measuring that factor, the factor describing the principal as an administrator had a moderate relationship ($.60 \geq \alpha \geq .50$) to the institutionalization of MUS-E. Because of the findings for these factors, hypotheses about their relationship to the institutionalization of MUS-E were more conclusively accepted or rejected. However, since the factors defining the unit leader as an agent of change, the principal as an agent of change, the superintendent as an agent of change, the informal school/school district structure, and the superintendent as an administrator were not consistent in the described relations, it was more difficult to conclusively accept or reject hypotheses about these factors.

The measure of each item's relation to the scale and to the total questionnaire provided an estimate of each change variable's relation (as defined by an item) to the a priori factors and institutionalization of MUS-E. Like the DSTAT2 findings, item correlation coefficients were viewed as descriptive support for statements made about the strength of the relationships of the change variables to a priori factors and the institutionalization of MUS-E. When the relations of the items and scales were compared to the factor analysis factors and the relationships between the items and the test were compared to the final multiple regression equations for each questionnaire, the ancillary questions could be answered and the strength of the factors could be determined. When an item's (representing a variable of change) correlation coefficients for its item to test relationship for any questionnaire was rated high and compared to a similarly high finding for that item on the multiple regression analysis, then the ancillary questions could be answered. If the findings for similar items were consistently high for more than one of the questionnaires, then the item was considered to be generally important to the understanding of the institutionalization of MUS-E and change in general.

Appendix E provides a list of the items to test and items to factor correlations for each questionnaire. Items (variables) which had measured correlation coefficients less than .40 with either the scale or total questionnaire were considered to be weak determinants of the factor or institutionalization of MUS-E. Conversely, items which had measured correlation coefficients greater than .59 with either the test scale or total questionnaire scale were considered to be strong determinants of the factor or institutionalization of MUS-E[279]. (See Table VII which describes the per cent of items for each questionnaire which are strong, moderate, or weak determinants.)

In all, 18 per cent of the unit teacher items, 6 per cent of the unit leader items, 8 per cent of the principal items, 2 per cent of the district coordinator items, and 2 per cent of the superintendent items were strong determinants of the institutionalization of MUS-E; while 27 per cent of the unit teacher, 32 per cent of the unit leader, 46 per cent of the principal, 50 per cent of the district coordinator, and 49 per cent of the superintendent items were weak determinants. Likewise, 39 per cent of the unit teacher, 41 per cent of the unit leader, 29 per cent of the principal, 14 per cent of the district coordinator, and 21 per cent of the superintendent items were strong determinants of their assigned factor; while 7 per cent of the unit teacher, 7 per cent of the unit leader, 25 per cent of the principal, 27 per cent of the district coordinator, and 19 per cent of the superintendent items were weak determinants.

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[279] General consensus among educational researchers provides for these cut off points when tests are multifactored. See chapters on correlation studies by Anastasi, Ghiselli, Guilford, and Kirk.

TABLE VII

PER CENT OF ITEMS ON EACH QUESTIONNAIRE WHICH WERE STRONG, MEDIUM, OR WEAK DETERMINANTS OF THE PRE-ASSIGNED FACTORS AND INSTITUTIONALIZATION OF MUS-E

STRENGTH OF RELATION	RELATION TO FACTORS	UNIT TEACHER		UNIT LEADER		PRINCI-PAL		DISTRICT COORD.		SUPER-INT.	
		No.	%	No.	%	No.	%	No.	%	No.	%
STRONG	$r \geq .60$	29	39%	29	41%	20	29%	9	14%	9	21%
MEDIUM	$.59 \geq r \geq .40$	40	54%	37	52%	32	46%	39	59%	26	60%
WEAK	$r \geq .39$	5	7%	5	7%	17	25%	18	27%	8	19%

STRENGTH OF RELATION	RELATION TO INSTITUTIONALIZATION	UNIT TEACHER		UNIT LEADER		PRINCI-PAL		DISTRICT COORD.		SUPER-INT.	
		No.	%	No.	%	No.	%	No.	%	No.	%
STRONG	$r \geq .60$	13	18%	11	16%	5	8%	1	2%	1	2%
MEDIUM	$.59 \geq r \geq .40$	41	55%	37	52%	32	46%	32	48%	21	49%
WEAK	$r \geq .39$	20	27%	23	32%	32	46%	33	50%	21	49%

Program FACTOR2 -- FACTOR2 was used to identify the set of distinct, uncorrelated factors of variables related to the institutionalization of MUS-E. It was believed that the factors arrived at through FACTOR2 could be compared to the a priori factors to see if similar factor groupings were obtained. If similar factor groupings were obtained, the hypotheses of the study could be clearly accepted or rejected. If dissimilar factor groupings were obtained, the hypotheses of the study could only be partially accepted or rejected and further factor analysis would have to be undertaken to identify a more comprehensive set of factors. For each of the questionnaires, an orthogonal varimax rotation with an eigenvalue cut-off point of .1 was used and factors accounting for more than one per cent of the variance were identified. The factor analysis factored out 18 factors for the unit teacher and unit leader questionnaires, 21 factors for the principal questionnaire, 20 factors for the district coordinator questionnaire, and 15 factors for the superintendent questionnaire. Altogether the factors accounted for over 60 per cent of the explainable variance on each questionnaire. (See Table VIII for an exact breakdown of the variance by factor for each questionnaire.)

Although the total amount of variance accounted for by any one factor was not greater than 11 per cent, this

TABLE VIII

VARIANCE PREDICTED BY FACTOR2 FACTORS FOR EACH QUESTIONNAIRE

FACTOR NUMBER	UNIT TEACHER	UNIT LEADER	PRIN-CIPAL	DISTRICT COORD.	SUPERIN-TENDENT
1	8.9	9.3	9.3	7.2	10.8
2	7.5	8.6	6.7	7.0	7.0
3	6.8	7.4	6.3	5.6	6.6
4	5.7	5.1	5.5	4.7	6.3
5	4.1	4.0	3.5	4.2	5.4
6	3.1	3.5	3.4	3.9	4.7
7	3.0	3.1	3.0	3.8	3.9
8	3.0	3.0	2.9	3.7	3.8
9	2.5	2.7	2.7	3.6	3.6
10	2.4	2.6	2.6	3.5	3.5
11	2.3	2.5	2.6	3.4	3.5
12	2.2	2.5	2.5	3.2	3.5
13	2.1	2.2	2.5	3.1	3.3
14	2.1	2.2	2.5	3.0	3.1
15	1.9	2.2	2.5	3.0	3.1
16	1.9	2.1	2.5	2.9	-
17	1.8	1.9	2.5	2.9	-
18	1.8	1.8	2.4	2.9	-
19	-	-	2.2	2.8	-
20	-	-	2.2	2.7	-
21	-	-	2.1	-	-
TOTAL PREDICTED VARIANCE	63.2	66.9	72.5	77.3	72.2

finding was not viewed as indicative of a weak set of factors, rather it was viewed as an indication that there were many factors which were equally descriptive of the institutionalization of MUS-E. The TSTAT findings also supported this interpretation since many factors on TSTAT had high factor loadings. From this, it was concluded that many different factors rather than just a few were important to the measure of the institutionalization of MUS-E.

This interpretation was further substantiated when the items included in each FACTOR2 factor were verbally described and an attempt was made to identify the general concept defined by each factor. When this was done, a different categorization scheme than that used for the study's factors was identified. (See Figure 3 and Appendix H for a description of these new factors.) Figure 3 provides a description of the concept underlying each factor and Appendix H provides a list of items included in each factor. In Appendix H, the items are listed in descending order from those most highly correlated to those least highly correlated with the factor. All items have correlation coefficients greater than .30 with each factor. Information included in Appendix H was used to develop Figure 3.

When the concepts about the a priori factors and the FACTOR2 factors were compared, it was concluded that

FACTOR VARIANCE	FACTOR DESCRIPTION
8.9	Open and Supportive Environment: Individualized Communication Decentralized Decisions
7.5	High Personal Cost/Benefit Ratio in Adopting MUS-E
6.8	Unit Teacher is Supported and Involved in Adopting MUS-E
5.7	?
4.1	Supportive Services: Inservice, Unit Meetings Scheduled When Problems With MUS-E
3.1	?
3.0	Principal and Parents Approve of MUS-E
3.0	Unit Teacher Feels He Has Influence In and Is Kept Informed of School's Activities
2.5	Unit Teacher Has Freedom to Experiment and Make Own Decisions
2.4	?
2.3	Non-formalized School: Few Rules, Principal Meets Frequently with Units
2.2	Unit Leader and Principal Approve of MUS-E
2.1	Unit Teacher is Supported and Involved in Adapting to MUS-E
2.1	?
1.9	?
1.9	Unit Leader Supports Unit Teacher's Efforts
1.8	?
1.8	Unit Teacher Communicates Freely with Unit Members and Feels Cohesive with Them

Figure 3: DESCRIPTION OF FACTORS DETERMINED BY FACTOR2 FOR UNIT TEACHER QUESTIONNAIRE

FACTOR VARIANCE	FACTOR DESCRIPTION
9.3	Open and Supportive Environment: Content of Program Liked, Communication Open
8.6	Process Facilitated: Easy to Adopt, Material On Time, Inservice Provided
7.4	Personal Cost/Benefit Ratio: Individual Finds It Is Easy to Adapt to MUS-E
5.1	Principal and District Coordinator Support Unit Leader and Problem Solving is Shared
4.0	Unit Leader Receives Positive Feedback From Principal and Likes Adoption Process
3.5	Unit Leader Has Power to Make Changes in Program
3.1	Decisions are Collective and Unit Leader is Informed of Others' Activities
3.0	Principal and District Coordinator Support the Unit Leader
2.7	?
2.6	Process is Flexible and Changes are Made When Needed
2.5	?
2.5	Easy to Adapt to MUS-E
2.2	?
2.2	Unit Leader Specializes and is Held Accountable
2.2	?
2.1	?
1.9	Unit Leader Feels He Has Influence on Program
1.8	Unit Leader Communicates Openly With Others In Unit

Figure 3: DESCRIPTION OF FACTORS DETERMINED BY FACTOR2 FOR UNIT LEADER QUESTIONNAIRE

FACTOR VARIANCE	FACTOR DESCRIPTION
9.3	Flexible Change Process: Many Information Sources, Collective Decision Making
6.7	Participative Leadership: Cooperation Between Staff
6.3	Principal Likes MUS-E and Feels Secure in Job
5.5	?
3.5	District Supports Principal Efforts to Adapt
3.4	?
3.0	Principal and Staff are Rewarded for Adapting to MUS-E
2.9	District Coordinator Supports Principal
2.7	Principal is Kept Informed and Communicates with Central Office
2.6	Superintendent Supports Principal
2.6	Principal Feels He Has Power in School District
2.5	?
2.5	?
2.5	?
2.5	?
2.5	?
2.5	School is Aided (Funds, Supportive Services) In Adopting MUS-E
2.4	?
2.2	?
2.2	Principal Works with Superintendent
2.1	?

Figure 3: DESCRIPTION OF FACTORS DETERMINED BY FACTOR2 FOR PRINCIPAL QUESTIONNAIRES

FACTOR VARIANCE	FACTOR DESCRIPTION
7.2	Collective Leadership: Open Communication and Shared Decisions
7.0	District Coordinator Likes MUS-E, is Involved in Process and Feels Process is Supported
5.6	Support Mechanisms Useful in Helping People Adopt MUS-E
4.7	District Coordinator Feels He Has Influence in District and Likes Program
4.2	Decision Making Decentralized and Communication Channels are Open with Superintendent
3.9	Action is Taken When There Are Problems with MUS-E
3.8	District Coordinator is Active in Change Process at District Level
3.7	?
3.6	?
3.5	Non-formalized School District: Few Rules, Informal Atmosphere
3.4	?
3.2	District Coordinator Likes Results of MUS-E
3.1	Open Communication Structure: Cooperation with Staff
3.0	?
3.0	Meetings Scheduled if Problems with MUS-E
2.9	?
2.9	?
2.9	?
2.8	District Coordinator Feels He Has Influence and Support in District
2.7	?

Figure 3: DESCRIPTION OF FACTORS DETERMINED BY FACTOR2 FOR DISTRICT COORDINATOR QUESTIONNAIRE

FACTOR VARIANCE	FACTOR DESCRIPTION
10.8	Superintendent Likes MUS-E Components and Its Effects in Schools
7.0	Personnel in Schools and Parents Approve of MUS-E
6.6	Non-formalized School District: Few Rules and Freedom to Experiment
6.3	Communication Channels Used and Supportive Services Available
5.4	Superintendent and School Board Like MUS-E
4.7	Superintendent is Involved in Process of Adapting to MUS-E
3.9	?
3.8	?
3.6	Superintendent Likes Results of MUS-E
3.5	?
3.5	?
3.5	?
3.3	?
3.1	?
3.1	Easy to Adapt to MUS-E

Figure 3: DESCRIPTION OF FACTORS DETERMINED BY FACTOR2 FOR SUPERINTENDENT QUESTIONNAIRE

the factors actually dealt with different matrices of items. The a priori factors used organizational and social systems theory to define the elements of change (i.e. process of change, agents of change, etc.). The FACTOR2 factors had cut across this theoretical framework to isolate specific variables of change relating to descriptive environments (i.e. open environments, supportive environments, availability of open communication channels, less formalized structures, etc.) which affected the user as he worked to institutionalize MUS-E. It is possible that each of these matrices is important in understanding institutionalization. The a priori factors may help identify focal points in the organization which are related to institutionalization while the FACTOR2 factors may help identify how the change variables themselves are related to institutionalization. Because the factors identified by FACTOR2 and those used by the study were developed from different perspectives, the two factor sets were not used together to help reject or accept the hypotheses. Instead, since the hypotheses were developed from the a priori factors the TSTAT findings alone were used to reject or accept the specific hypotheses. In the final chapter of this study, the differences between the a priori and the FACTOR2 factors are analyzed further and recommendations are made about the need for certain types of future factor analysis studies.

Program STEPREG1 -- Program STEPREG1 was used to determine the set of items which were the best determinants of the institutionalization of MUS-E. Originally, all the items in each questionnaire were entered as "free" variables in an initial regression model. A multiple regression coefficient and coefficient of determination (predicted variance of variables in equation) was then computed and the program employed a backward selection technique to remove those items which contributed least to the prediction of the institutionalization of MUS-E. The items were selectively removed (in order from most disagreement to least disagreement) until the amount of variance explained by the items being removed was significant at greater than a .10 level of significance.

Table IX provides a description of the multiple correlation coefficient and determination coefficient (corrected for the unreliability of the dependent variable) for the initial and final regression model for each questionnaire.

In all, 296 items (representing 65 variables of change) were analyzed over all the questionnaires. One hundred and ninety-six items (representing 24 variables of change) were removed from the regression equations and 100 items (representing 41 variables of change) were left in the final equations. Thus, of the 65 original variables,

TABLE IX

MULTIPLE CORRELATION COEFFICIENT AND COEFFICIENT OF DETERMINATION FOR THE REGRESSION MODELS FOR EACH QUESTIONNAIRE

INITIAL MODEL	UNIT TEACHER	UNIT LEADER	PRINCI-PAL	DISTRICT COORD.	SUPERIN-TENDENT
Correlation Coefficient	.8840	.9245	.8357	.9375	.9182
Determination Coefficient	.7814	.8547	.6985	.8788	.8430
Number of Variables	69	66	64	60	37
FINAL MODEL	UNIT TEACHER	UNIT LEADER	PRINCI-PAL	DISTRICT COORD.	SUPERIN-TENDENT
Correlation Coefficient	.8788	.9142	.7365	.8902	.9039
Determination Coefficient	.7723	.8357	.5424	.7924	.8171
Number of Variables	29	22	14	17	18

41 variables were identified as predictive of institutionalization of MUS-E when selectively asked of the appropriate respondent groups.

These findings from STEPREG1 were used with the TSTAT findings to answer the ancillary questions of the study. For each questionnaire, the place of each of the items in the development of the final regression model was compared to the TSTAT correlation coefficients for those items to determine the overall strength of each item's relationship to MUS-E. Items (variables) which TSTAT identified as strongly related (coefficient ≥ .60) to institutionalization of MUS-E and STEPREG1 identified as in the final regression equation were considered to be strongly related (overall) to the institutionalization of MUS-E. Other levels of relationship to MUS-E were calculated from the item's TSTAT coefficients and place in the equation, but most of these levels of relationships were less optimal or useful for answering the ancillary questions. In all, 57 of the original 296 items across all the questionnaires and 33 of the original 65 identified variables of change (as defined in the ancillary questions) were identified as strongly related to the institutionalization of MUS-E.

STEPREG1 also provided an internal analysis to test the validity of the final regression model for each questionnaire. If the regression model was valid and if the error distribution of each respondent was normal, a plot of standardized residuals (obtained by dividing the differences between the observed and computed values of the dependent variable by the standard error of estimate) was distributed as a t-distribution with about

95 per cent of the residuals falling between -2 and +2. When the plot of residuals was computed for each questionnaire, all five regression models were found to have more than 96 per cent of their residuals between -2 and +2. Thus, it was concluded that the residual models were valid predictive models in relating to the institutionalization of MUS-E.

Program DISCRIM1 -- DISCRIM1 was used to identify whether there were any differences between discrete groupings of respondents on the fill-in-the-blank items in the way they related to the institutionalization of MUS-E. Respondent differences on six items (education level, years of teaching in the school district, years of total teaching, years of administrative experience in the school district, years of total administrative experience in education, and achievement aspiration) were analyzed by means of an analysis of variance of the difference in strength of relation between each of the discrete groups of respondent responses and the institutionalization of MUS-E. If the differences between the discrete groupings of responses were determined to be significantly different, the level of significance was specified at a $p \geq .05$ level. Appendix K provides a detailed description of DISCRIM1 findings for each of the items and Table X provides a description of DISCRIM1 significant findings for each item.

TABLE X

DISCRIM1 SIGNIFICANT FINDINGS FOR SIX DESCRIPTIVE ITEMS

DESCRIPTION OF ITEM	UNIT TEACHER	UNIT LEADER	PRINCIPAL	DISTRICT COORD.	SUPERINTENDENT
Education Level	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Number of Years in Teaching	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Total Years in Teaching	Not Significant	Significant	Not Significant	Not Significant	Not Significant
Years in Administration	--	--	Not Significant	Not Significant	Significant
Total Years in Administration	--	--	Not Significant	Not Significant	No Findings
Achievement Aspiration Level	Significant	Not Significant	Not Significant	Not Significant	Not Significant

No significant differences between groups of respondents were found for level of education, number of years teaching in the school district, or total number of years of administrative experience in education. Significant differences were found for only the unit leader for total number of years teaching, the superintendent for number of years of administrative experience in the school district, and the unit teacher for achievement aspiration level.

TESTS OF THE HYPOTHESES

Before the hypotheses of the study could be tested, a decision rule had to be developed. Since a formal test was not available to test the hypotheses directly, a decision rule was developed which incorporated and synthesized measures used by others as they described the strength of relationships between different items.

To test the hypotheses, the findings of the TSTAT coefficients for each a priori factor on each questionnaire were analyzed. Factors whose alpha coefficients were greater than .59, were assigned a weight of 3 representing a strong relationship with the institutionalization of MUS-E. Factors whose alpha coefficients were between .40 and .59 were assigned a weight of 2 representing a moderate relationship; and, factors whose alpha coefficients were less than .40 were assigned a weight of 1 representing a weak relationship. It has already been described (in Chapter II) how it was possible through construct validity estimates to relate the factors on the test to the institutionalization of MUS-E as defined by the test itself. If a factor on any questionnaire was assigned a 3, it was concluded that the factor was strongly related to the institutionalization of MUS-E for that questionnaire(s). If a factor was found to be strongly related to the institutionalization of MUS-E on any questionnaire, the hypothesis about that factor was rejected.

The rationale to support this decision rule is relative to the study itself. First, complex procedures were used in the test construction to attain valid test measures of the institutionalization of MUS-E. To support this construct estimate, the researcher decided to err in the direction of rejecting a hypotheses when in fact it was true since the aim of the study was to identify as many factors of change as possible. It was a conservative decision rule, therefore, not to reject too many change factors from further consideration. Second, each of the analyses used in the study (see TSTAT findings Table V, FACTOR2 findings Table VIII, and STEPREG1 findings Table IX) indicated that the questionnaire, the factors, and the items in each questionnaire were all describing some characteristic fairly strongly. The TSTAT alpha coefficients for the questionnaires were between .83 and .95, the FACTOR2 factors explained between 63 and 77 per cent of the questionnaire variances, and the

STEPREG1 equations described between 54 and 83 per cent of the dependent variables variance. From these figures, it was concluded that the questionnaires were indeed measuring much of what was construed to be the institutionalization of MUS-E. Again, this would support the use of a decision rule which allowed a strong ($\alpha \geq .60$) measure on one questionnaire to support the rejection of a hypothesis. (Many of the factors had moderate measures between .40 and .59, indicating some degree of relationship between them and institutionalization.) Third, the nature of the questionnaires themselves erred in the direction of presupposing that the variables measuring change were consistently viewed and worked with across the respondent groups. The information possessed by individuals internal to a particular event, process, or situation differs remarkably from that information possessed by an individual outside an event, process, or situation; thus, to accept that a factor or a variable (item) had no relationship to change would be to deny the fact that the factor or variable (item) was predictive for an important group (any of the study's respondent groups). This decision rule was used for testing the hypotheses and answering the ancillary questions.

Table XI is provided to deal with the study's hypotheses. The findings described in Table VI and

Figure 1 provided the information necessary to accept or reject the hypotheses. Table XI was developed from the information in Table VI and Figure 1 so as to provide a more simplified way of viewing the relationship of each factor to the institutionalization of MUS-E. Subfactor coefficients (e.g. the unit leader as an agent of change) were considered as representative of the factor coefficient (e.g. agents of change); so if any one subfactor on a questionnaire was strongly related to the institutionalization of MUS-E, it was considered that the factor itself was related to institutionalization. It was possible to make this representation since the hypotheses did not specify that all of the variables in a set had to relate to institutionalization of MUS-E and the subfactors had already been defined (see Figure 1) as components of the factor. The factors defining the agents of change, the formal organizational variables, and individual user variables had subfactors.

Also since the hypotheses stated that no relationship existed between a set of mediating variables (for example) and the institutionalization of MUS-E, it was assumed that a relationship between components of a factor and institutionalization were representative of a relationship between the factor and institutionalization as well.

For the same reason, it was assumed that a relationship between a factor on any questionnaire was representative of a relationship between the factor and institutionalization. In a later section of this chapter, the items and subfactors for each factor will be described and the factors will be refined.

The six hypotheses which were examined were:

(1) There is no relationship between the perceived existence of the mediating variables of the organizational component and the degree to which the organizational component is successfully institutionalized.

(2) There is no relationship between the perceived existence of the mediating variables of the process of changing and the degree to which the organizational component is successfully institutionalized.

(3) There is no relationship between the perceived existence of the mediating variables of the agents of change and the degree to which the organizational component is successfully institutionalized.

(4) There is no relationship between the perceived existence of the intervening, formal organizational variables and the degree to which the organizational component is successfully institutionalized.

(5) There is no relationship between the perceived existence of the intervening, informal organizational variables and the degree to which the organizational component is successfully institutionalized.

(6) There is no relationship between the perceived existence of the intervening, individual variables and the degree to which the organizational component is successfully institutionalized.

From the findings described in Table XI, it is concluded that the first five hypotheses about the mediating variables of the organizational component, mediating variables of the process of changing, mediating variables of the agents of change, intervening formal organizational variables, and intervening informal organizational variables were rejected. It was concluded that there is a relationship between these sets of variables and the institutionalization of MUS-E. The sixth hypothesis about the intervening individual variables was tenable. It was concluded that there is not enough information to state that there is a relationship between intervening individual variables and the institutionalization of MUS-E.

When each of the factors was analyzed further, it was apparent that there are differences across the questionnaires in respect to the relationship of their factors and subfactors to the institutionalization of MUS-E. No factor has unanimous agreement as to its relationship to institutionalization. Only one subfactor (the intervening formal organizational variable at the school level) has unanimous agreement as to its relationship (which is strong) to institutionalization. What are the reasons for these differences and lack of agreement across the groups?

TABLE XI

STRENGTH OF THE RELATIONSHIP BETWEEN A FACTOR (OR ITS SUBFACTORS) AND THE INSTITUTIONALIZATION OF MUS-E

FACTOR DESCRIPTION		UNIT TEACHER	UNIT LEADER	PRINCIPAL	DISTRICT COORDINATOR	SUPERINTENDENT	RELATION TO INSTITUTIONALIZATION	TEST OF HYPOTHESIS
MEDIATING VARIABLES OF MUS-E		3	2	3	2	3	YES	REJECT
MEDIATING VARIABLES OF PROCESS OF CHANGE		3	3	2	2	2	YES	REJECT
MEDIATING VARIABLES OF AGENTS OF CHANGE	UL	2	-	-	-	-		
	PRIN	1	3	-	-	-		
	DIS CO	3	3	2	-	-		
	SUPT	-	-	1	1	-	YES	REJECT
INTERVENING FORMAL ORGANIZATIONAL VARIABLES	SCHOOL	3	3	3	-	-		
	SCHOOL DIST	-	-	-	2	2		
	COM	2	1	1	1	1	YES	REJECT
INTERVENING INFORMAL ORGANIZATIONAL VARIABLES	SCHOOL	2	3	1	-	-		
	SCHOOL DIST	-	-	-	1	1	YES	REJECT
INTERVENING INDIVIDUAL VARIABLES	PRIN	2	2	-	-	-		
	SUPT	-	-	2	1	-		
	USER	2	1	1	1	1	?	FAIL TO REJECT

KEY:
UL = Unit Leader
PRIN = Principal
DIS CO = District Coordinator
SUPT = Superintendent
COM = Community
SCHOOL = School
SCHOOL DIST = School District

It was thought that the differences between the groups is an indication of: (1) the amount of information each group has about the relation of each variable to institutionalization; (2) the proximity of each group to the entire process of institutionalization; and (3) the way in which the questionnaires were developed. The amount of information a group has about a variable is not usually constant across different groups. For example, those variables related to the change itself, the agents of change, and the formal organizational variables at the school level are easier for the unit teacher and unit leader to describe since they work with the change, work with the change agents, and work in the school. However, the different responsibilities of the principal, the district coordinator and the superintendent would result in their being less informed about those variables. Likewise, the proximity of the unit teacher and unit leader to the process of change may account for their rating the process of change more strongly than the other three respondents who perform more of a supervisory rather than operational role in relation to the change process. Since the change questionnaires were developed from a unit teacher - unit leader school unit perspective, it is possible also that the itmes developed for the other three administrative positions were not valid descriptors of the institutionalization of

MUS-E for those groups. It was found that more of the principal, district coordinator, and superintendent items were weak determinants of MUS-E than were the unit teacher and unit leader items. (See Table VII.) Also, more factors and subfactors on the unit teacher and unit leader questionnaire were strongly related (see Table VI) to the institutionalization of MUS-E than factors or subfactors on the other questionnaires.

ANCILLARY QUESTIONS

In order for the ancillary questions to be answered, a decision rule had to be developed to convert the findings about each item to findings for each variable. Again, a formalized method for answering these questions was not available so a decision rule incorporating and synthesizing measures used by others to describe the strength of a relationship between items was developed.

To answer most of the ancillary questions, the findings of TSTAT and STEPREG1 for each item were combined. First, the TSTAT item correlation coefficients for the item to test relationships were analyzed. Like the factor coefficients, items whose correlation coefficients were greater than .59 were assigned a weight of 3 representing a strong relationship with the institutionalization of MUS-E; items whose coefficients were between .40 and .59 were assigned a weight of 2 representing a moderate relationship; and, items whose coefficients were less than .39 were assigned a weight of 1 representing a weak relationship. Second, the STEPREG1 equation model for each questionnaire was analyzed. If an item was included in the final equation model, it was assigned a weight of 3 representing a strong relationship to the institutionalization of MUS-E; if an item was excluded in an early step from the model at a significance exclusion level of between .50 and .90, it was assigned a weight of 1 representing a weak relationship; and, if an item was excluded in a later step from the model at a significance exclusion level of between .11 and .49, it was assigned a weight of 2 representing a moderate relationship.

Third, these STEPREG1 and TSTAT item weights were combined and assigned a final weight along the following lines. If the item was assigned two 3's or a 2 and a 3, the item was considered to reflect a strong relationship to the institutionalization of MUS-E. If the item was assigned two 2's or a 1 and 3, the item was considered to reflect a moderate relationship. And, if the item was assigned two 1's or a 1 and 2, the item was considered to reflect a weak relationship. If any item (on any questionnaire) reflected a strong relationship to the institutionalization of MUS-E, it was concluded that the item (variable) was directly related to the institutionalization of MUS-E. If an item (across all questionnaires) did not have a strong relationship, it was concluded that the item did not relate to the institutionalization of MUS-E. If two or more items were used to describe a variable of change, at least half of the items had to have at least one strong relationship across the questionnaires in order for the conclusion to be made that the item (variable) was related to the institutionalization of MUS-E. The rationale for using this decision rule to answer the ancillary questions was the same as the rationale used in testing the hypotheses. The researcher concluded that the probability of answering a question positively (when in fact it was not), using two distinct measures of the items relation to institutionalization was not great enough to warrant a more restrictive decision rule. Again, this was a subjective assessment of the strength of the measures used in the analyses of the study.

The findings contained in Appendix G, I, J, and L and Figure 3 provided the information to answer most of the ancillary questions. Appendices G, I, and J provided the raw data from which the item weights were assigned, Appendix L provided the assigned item weights from the TSTAT and STEPREG1 analyses, and Figure 3 provided the concept description of Tables XII through XVII and developed the aggregated weights (combined TSTAT and STEPREG1 weights) for each item. The ancillary questions were answered using these tables.

The remainder of the ancillary questions were answered from either the DISCRIM1 findings or earlier pilot analyses. Earlier pilot analyses had dropped out a few items judged to be unreliably measured. DISCRIM1 had identified whether significant differences existed between certain discrete groupings of respondents on a certain item. If significant differences were found, it was concluded that for that item discrete groupings of respondents described a different set of relations to MUS-E. However, unlike the factor and major item analyses for the hypotheses and most of the ancillary questions, these findings were not generalized as representative of a significant finding for that item across all questionnaires. The same set of conditions did not hold for these items in order to apply the same rationale. These items were initially judged to be "questionable" inclusions in the development of the questionnaires and the measures (blank completion items) used to attain information about the items were also judged to relate to each of the respondents equally (not on a proximity to change or need to know basis). The findings from these two analyses will be integrated in Tables XII through XVII as the items measured by them arise. Over-all, no significant relationships across all the questionnaires were found to exist for the items measured by these analyses.

Before describing the answers to the ancillary questions, there is a need to describe how items are related to variables and how variables are related to MUS-E. Item statements reflect levels of variable concepts. Item statements which are rated highly by the respondents (checked as "Strongly Agree" on the questionnaire) directly relate to the institutionalization of MUS-E only if institutionalization of MUS-E has been rated high (i.e. the performance objectives of MUS-E have been met) by the same set of respondents. Items which have had maximized responses describe a maximized concept. For example, if respondents checked low school formalization as a characteristic of their schools and if they also had checked the institutionalization of MUS-E as characteristic of their school, then, that item would have a strong correlation coefficient with institutionalization. Since the items for all the performance objectives of MUS-E were shown positively, only item statements which were rated positively related to institutionalization of MUS-E.

Mediating Variables of MUS-E -- The first ancillary question which was investigated was:

(1) What is the relationship between each mediating variable of the organizational component and the

> degree to which the organizational component is successfully institutionalized.

Six variables of MUS-E (relative advantage, simplicity, compatibility, trialability, observeability, and ease in adoption) were analyzed to determine their relationship to the institutionalization of MUS-E. Table XII provides the aggregated data from which the variables' relationships were described. The decision rules defined earlier were applied. When possible, the findings are discussed further.

All six mediating variables were found (by at least one group) to directly relate to the institutionalization of MUS-E. Of the six variables, the set of items defining the relative advantage of MUS-E were more directly related to the institutionalization of MUS-E than any other set of items. In particular, the individuals closest to MUS-E (the unit teacher and unit leader) and the individual furthest away from MUS-E (the superintendent) were more strong in their support of the organizational advantage of MUS-E than any other group. Possibly the principal (who thought that the advantage of MUS-E was that the students liked school better) and the district coordinator (who thought that the instructional programming techniques and the individual learning needs were advantages of MUS-E) were less supportive of MUS-E because they were faced with changes in their roles and a decrease in their power

TABLE XII

AGGREGATED ASSESSMENT OF TSTAT AND STEPREG1 ITEM WEIGHTS FOR THE MEDIATING VARIABLES OF MUS-E

ITEM NO.	VARIABLE MEASURED	UNIT TEACHER	UNIT LEADER	PRIN-CIPAL	DISTRICT COORDIN.	SUPERIN-TENDENT	RELATIONSHIP TO INSTITUTIONALIZATION
	RELATIVE ADVANTAGE OF:						
1	Instructional Program	3	3	2	3	3	YES
2	Learning Basic Skills	3	3	2	2	3	YES
3	Meeting Individual Needs	3	3	2	3	3	YES
4	Making Own Role Effective	3	3	2	2	3	YES
5	Making Other Roles Effective	-	-	-	2	3	YES
6	Children Liking School	3	2	3	2	3	YES
	COMPATIBILITY WITH:						
7	Principal	2	3	-	-	-	YES
8	Teachers	3	2	1	-	-	
9	Community	2	1	1	2	1	
10	Self	3	1	1	2	1	
11	Superintendent	-	-	1	1	-	
12	School District Personnel	-	-	-	-	3	
13	District Coordinator	-	-	1	-	-	
14	School Board	-	-	-	-	2	
15	Observability	1	2	3	2	3	YES
16	Trialability	3	3	1	1	3	YES
17	Ease in Adoption	1	1	1	1	3	YES
18	Simplicity	1	2	2	3	3	YES

KEY

3 = Strong Relation to Institutionalization
2 = Moderate Relation to Institutionalization
1 = Weak Relation to Institutionalization

and authority relationships in the schools. The other group either working more closely with MUS-E or viewing it from a distance were perhaps able to appreciate its advantages.

In terms of the compatibility of MUS-E with personnel in the school community, compatibility with the principal, the teachers, the unit teacher user, and the school district personnel were all directly related to institutionalization of MUS-E. In schools where unit teachers indicated that they and their peers approved of MUS-E, MUS-E was described as closer to being institutionalized. In school districts, where the superintendent indicated that the personnel approved of MUS-E, MUS-E was described (by the superintendent) as closer to being institutionalized.

In terms of the length of time it took to institutionalize MUS-E, only the superintendent described institutionalization as directly related to the amount of time it took to institutionalize. Possibly, where MUS-E took less time to be institutionalized, problems (hinderances) with school budgets and the need to justify lengthy expenditures were not so frequently encountered. It's logical that this concept would have been isolated by the superintendent since he was in a position to have information about this variable.

Mediating Variables of the Process of Changing -- The second ancillary question which was investigated was:

> (2) What is the relationship between each mediating variable of the process of changing and the degree to which the organizational component is successfully institutionalized.

Thirteen variables of the process of change (equalized power, adequate user participation, useful user training, collective decision-making, sufficient assistance, available research findings, clearly specified objectives, adequate user involvement, sufficient resources, materials supplied on time, adequate slack time, sufficient time alotted for group meetings, and lack of collective bargaining problems) were analyzed to determine their relationship to the institutionalization of MUS-E. Table XIII provides the aggregated data from which these questions were answered.

Only seven of the fourteen process variables were found to directly relate to the institutionalization of MUS-E. Clearly specified objectives, available research findings, useful inservice training, sufficient funds, useful feedback mechanisms, adequate user involvement, and shared decision making were directly related to the institutionalization of MUS-E while sufficient assistance, equalized power, materials supplied on time, problem solving meetings scheduled when needed, unit leader slack

TABLE XIII

AGGREGATED ASSESSMENT OF TSTAT AND STEPREG1 ITEM WEIGHTS FOR THE MEDIATING VARIABLES OF THE PROCESS OF CHANGE

ITEM NO.	VARIABLE MEASURED	UNIT TEACHER	UNIT LEADER	PRIN-CIPAL	DISTRICT COORDIN.	SUPERIN-TENDENT	RELATION-SHIP TO INSTITU-TIONALI-ZATION
19	Clearly Specified Objectives	3	3	1	1	2	YES
20	Available Research Findings	3	1	3	1	1	YES
	USEFUL USER TRAINING:						
21	Initial Orientation	1	2	3	1	-	YES
22	Inservice Training	3	3	2	1	1	YES
23	Sufficient Assistance	2	1	2	2	2	NO
24	Sufficient Resources	-	-	1	1	3	YES
	USEFUL USER FEEDBACK:						
25	From Unit Leader	2	-	-	-	-	YES
26	From Principal	2	2	-	-	-	YES
27	From Superintendent	-	-	1	3	-	YES
28	From Other Organizations	3	1	1	2	3	YES
29	Adequate Involvement in Process	1	2	1	2	3	YES
30	Adequate Participation in Process	2	3	1	1	-	YES
31	Collective Decision-Making	3	1	1	1	-	YES
32	Equalized Power	2	2	1	1	1	NO
33	Materials Supplied On-Time	2	1	2	-	-	NO
34	Sufficient Time for Group Meetings	2	1	1	1	3	YES
35	Adequate Slack Time	-	1	-	-	-	NO
36	Did Not Have Collective Bargaining Problems	-	-	-	2	2	NO
							NO

KEY

3 = Strong Relation to Institutionalization
2 = Moderate Relation to Institutionalization
1 = Weak Relation to Institutionalization

time, and lack of collective bargaining problems were not directly related to the institutionalization of MUS-E. The major difference between these two groups of variables seems to be how necessary the variables are to the process itself. User involvement, inservice training, specified objectives, sufficient funds, useful feedback are more essential to program change than are the supplemental variables of materials supplied on time, lack of collective bargaining problems, or problem solving meetings scheduled when needed. While the latter variables are valuable, changes have been made (in the past) without these supportive services. In many school districts, the absence of these latter variables is looked upon as a standard characteristic of school districts, while at least lip service or at most global goals are ascribed to the former variables. The acknowledged need for these variables was supported by this study's findings.

In terms of the individuals describing these variables, another major difference was discovered. Most of the variables which had direct relationship to institutionalization were defined by the unit teacher and unit leader. Possibly this is because they were more closely involved in and informed of the process of change than the other groups. The variables which describe user training, objectives of MUS-E, user involvement, and shared decision making were all defined by these two groups.

Mediating Variables of the Agents of Change -- The third ancillary question which was investigated was:

> (3) What is the relationship between each mediating variable of the agents of change and the degree to which the organizational component is successfully institutionalized.

The activities of four different agents of change (unit leader, principal, district coordinator, and superintendent) were analyzed. Eight variables related to the agent of change (support for user in helping him adapt to MUS-E, concern for the user's attitudes towards MUS-E, concern for providing information about MUS-E, concern for spending adequate time with user, concern for providing user with necessary kinds of assistance for adapting to MUS-E, concern for encouraging user to experiment with MUS-E requirements, concern for encouraging users to work with others coming into the organization, and concern for meeting often anough with organizations) were analyzed. Table XIV provides the aggregated data from which these questions were analyzed.

At first, these variables were analyzed separately for each individual agent of change. From this separation, it was found that the variables which were related to institutionalization of MUS-E were varied for each agent of change. For the unit leader, concern for spending adequate time with the user was directly related to institutionalization. For the principal, concern for spending adequate time with the user, concern for the user's attitude about MUS-E, and concern for encouraging the user to experiment with MUS-E were directly related to institutionalization. For the district coordinator, concern for the attitude of the user, concern for providing information about MUS-E, concern for supporting the user's efforts to adapt to MUS-E, and concern for meeting with the units often enough were directly related to institutionalization. For the superintendent, concern for encouraging the user to work with others was directly related to institutionalization. Why was this the case? Possibly, the role performed by the agent of change varied with his position in the school district. For example, while only one variable describing the unit leader and the superintendent role related to institutionalization, three variables of the principal and four variables of the district coordinator role related to institutionalization, three variables of the principal and four variables of the district coordinator role related to institutionalization. Possibly, the roles of the principal and district coordinator (especially) were related to institutionalization because their positions were theoretically and descriptively defined in relation to institutionalization, while the position of the superin-

TABLE XIV

AGGREGATED ASSESSMENT OF TSTAT AND STEPREG1 ITEM WEIGHTS FOR THE MEDIATING VARIABLES OF THE AGENTS OF CHANGE

ITEM NO.	VARIABLE MEASURED	UNIT TEACHER	UNIT LEADER	PRINCIPAL	DISTRICT COORDIN.	SUPERINTENDENT	RELATIONSHIP TO INSTITUTIONALIZATION
	UNIT LEADER:						
37	Spent Adequate Time	3	-	-	-	-	YES
38	Supported Users Efforts	1	-	-	-	-	NO
39	Provided Needed Aid	1	-	-	-	-	NO
40	Concerned with User's Attitude	2	-	-	-	-	NO
41	Encouraged User to Experiment	1	-	-	-	-	NO
	PRINCIPAL:						
42	Supported User's Efforts	1	2	-	-	-	NO
43	Spent Adequate Time	1	3	-	-	-	YES
44	Provided Needed Aid	1	1	-	-	-	NO
45	Concerned with User's Attitude	3	3	-	-	-	YES
46	Encouraged User to Work with Others	-	2	-	-	-	NO
47	Encouraged User to Experiment	-	3	-	-	-	YES
48	Met IIC Often Enough	-	1	-	-	-	NO
	DISTRICT COORDINATOR:						
49	Concerned with User's Attitude	3	1	1	-	-	YES
50	Provided Needed Information	3	2	1	-	-	YES
51	Spent Adequate Time	2	2	2	-	-	NO
52	Supported User's Efforts	3	3	1	-	-	YES
53	Provided Needed Aid	2	2	2	-	-	NO
54	Met User Often Enough	3	3	1	-	-	YES

KEY

3 = Strong Relation to Institutionalization
2 = Moderate Relation to Institutionalization
1 = Weak Relation to Institutionalization

TABLE XIV Continued

ITEM NO.	VARIABLE MEASURED	UNIT TEACHER	UNIT LEADER	PRIN-CIPAL	DISTRICT COORDIN.	SUPERIN-TENDENT	RELATIONSHIP TO INSTITUTIONALIZATION
	SUPERINTENDENT:						
55	Spent Adequate Time	-	-	2	1	-	NO
56	Supported User's Efforts	-	-	1	1	-	NO
57	Concerned with User's Attitude	-	-	1	1	-	NO
58	Provided Needed Aid	-	-	2	2	-	NO
59	Encouraged User to Work with Others	-	-	3	2	-	YES
60	Encouraged User to Experiment	-	-	2	1	-	NO
61	Provided Needed Information	-	-	-	2	-	NO
	OVERALL AGENTS:						
62	Spent Adequate Time	3	3	2	1	-	YES
63	Supported User's Efforts	3	3	1	1	-	YES
64	Provided Needed Aid	2	2	2	2	-	NO
65	Concerned with User's Attitude	3	3	1	1	-	YES
66	Encouraged User to Experiment	1	3	2	1	-	YES
67	Provided Needed Information	3	2	1	2	-	YES
68	Encouraged User to Work with Others	-	2	3	2	-	YES
69	Met Users Often Enough	3	3	1	-	-	YES

tendent was defined in terms of organizational responsibilities.

When the roles of the agents were viewed across all respondent groups, however, it was found that each respondent group did not view the same agent of change similarly. Unit leaders described the role of the principal more positively than did unit teachers, and unit teachers and unit leaders described the role of the district coordinator more positively than did the principal. The reasons for these variances again might be related to the positions of the respondent and agent. Unit leaders have spent more time with principals than unit teachers, thus, they have a better opportunity for viewing a principal's role more closely in relation to the change process. Unit teachers and unit leaders have viewed the district coordinator more positively than the principal because (unlike the principal) they have not viewed the district coordinators as a threat to their own authority position in the school.

In order to view the "agents of change" together, findings for the individual agents had to be combined. Again, the same decision rule was applied in combining the item weights of the agents. When this was done, all of the role descriptors except "providing needed assistance" were found to be directly related to the institutionalialization of MUS-E. This might be an indication that while most of the descriptors are important, different agents may be looked upon to assume different responsibilities. Thus, in order for a school district to be successful in institutionalizing a change program, different agents may need to perform differently.

Formal Intervening Variables -- The fourth ancillary question which was investigated was:

> (4) What is the relationship between each intervening, formal organizational variable and the degree to which the organizational component is successfully institutionalized.

Intervening, formal organizational variables were analyzed at the school, school district and community level. At the school or school district level, eleven variables (decentralization of decision making, low formalization, high complexity, high individual accountability, two-way communication channels, job specialization, freedom of personnel to control jobs, sufficient time for scheduling meetings to deal with district problems, staff heterogeneity, integrative communication links, and interdependent staff functions) were analyzed. At the community level, five variables (a homogeneous population, a high public interest in education, a cosmopolitan population, an effective local government, and a willingness to pay for educational programs) were analyzed. Table XV provides the aggregated data from which these questions were answered.

TABLE XV

AGGREGATED ASSESSMENT OF TSTAT AND STEPREG1 ITEM WEIGHTS FOR INTERVENING FORMAL ORGANIZATIONAL VARIABLES

ITEM NO.	VARIABLE MEASURED	UT	UL	P	DC	S	REL. TO INSTITU.
	Low Formalization:						
62	What rules specified for	2	2	2	1	2	NO
63	Number of rules in district	-	-	-	1	1	NO
	Low Formalization:						
64	Number of rules in school	3	2	2	-	-	YES
	Integrative Communication:						
65	With colleagues	3	3	-	2	1	YES
66	With superordinate	3	3	1	3	1	
67	With subordinate	-	1	2	1	1	
68	Freedom to control job	1	1	2	1	1	NO
	High Individual Accountability:						
69	No conflicting expectations	2	-	1	2	1	YES
70	Accountability for achievement	3	2	3	2	2	
71	Open two-way communication channels	2	1	1	1	2	NO
72	High complexity	-	-	2	2	3	YES
73	Job specialization	3	2	3	-	-	YES
74	Interdependent staff functions	2	1	-	-	-	NO
	Decentralized Decision Making:						
75	What decides	3	3	1	3	-	YES
76	How participates	1	2	2	3	-	YES
77	Sufficient time for scheduled meetings	-	-	-	1	-	NO

TABLE XV Continued

ITEM NO.	VARIABLE MEASURED	UT	UL	P	DC	S	REL. TO INSTITU.
	A Community Is:						
78	Cosmopolitan	3	3	2	1	2	YES
79	Willing to pay for education	3	1	3	1	2	YES
80	Involved in school	1	2	1	1	1	NO
81	An effective civil government	1	1	2	3	1	YES
	*Staff Heterogeneity	Dropped out in pilot analysis					NO
	*Community Homogeneity	Dropped out in pilot analysis					NO

KEY

3 = Strong Relation to Institutionalization
2 = Moderate Relation to Institutionalization
1 = Weak Relation to Institutionalization

UT = Unit Teacher
UL = Unit Leader
P = Principal
DC = District Coordinator
S = Superintendent
Rel. to Institu. = Relation to Institutionalization

At the formal school/school district level, low formalization at the school level, integrative communication channels, high individual accountability, high school district complexity, job specialization at the school level, and decentralized decision making were directly related to institutionalization of MUS-E, while low school district formalization, freedom to control one's job, use of two way communication channels, interdependent staff functions at the school level, sufficient time for school district meetings, and staff heterogeneity were not related to institutionalization.

Despite the fact that only six of the twelve variables were related to institutionalization, there was a similarity in some of the variables related and some not related to institutionalization. For example, although low formalization was related to institutionalization at the school level, it was not related to institutionalization at the school district level. This was not completely contradictory, because although there would be a need for less rules and procedures at the school level where the change was being institutionalized, at the same time there would not be a corresponding need for low formalization at the school district level. In fact, there might even be a need for greater formalization at the district level where supportive functions (to the institutionalization of MUS-E) and consistent policies during an experimentation phase in the schools would need to be maintained.

Another apparent inconsistency of the findings, was that while integrative communication channels were related to institutionalization, open subordinate-superordinate (two-way) channels were not. Here, too, though, the findings were consistent. While only unit teacher, unit leaders, and district coordinators described integrative communication channels positively between colleagues and superordinates, all groups described integrative communication channels less positively between themselves and subordinates. The item which they were asked about which related to two-way communication was how they communicated with their subordinates. They described this communication less positively and openly, and the variable was rejected as being related to institutionalization. Was there an inconsistency? Not really, it seems that communication upward and with colleagues was defined as more integrative than communication downward; and this was consistent with the philosophy of MUS-E wherein much was designed to be done from the bottom up, especially in the institutionalization of MUS-E. The relationship of job specialization and decentralization of decision-making to institutionalization could also be explained using this philosophy.

When the differences between respondent groups as to how they viewed formal school/school district variables were analyzed, an interesting difference was uncovered. The unit teachers and to a lesser extent, the unit leaders, described the formal organizational structure more positively than the other groups. This could have reflected either their misinformation about formalization, their low position in the school district hierarchy (away from the formalization of rules and procedures), or the need for characteristics of formal organizational structure to be modified when individuals were directly involved in the institutionalization of MUS-E. Possibly, other individuals were not as concerned about the formal characteristics of an organization if they were not as directly involved in the institutionalization of MUS-E.

At the community level, three of the variables were related to the institutionalization of MUS-E. If a community was described as cosmopolitan, willing to pay for education, and possessing an effective civil government, it directly related to institutionalization of MUS-E. All five respondent groups seemed fairly consistent in their description of their communities' characteristics, although the unit teachers, unit leaders, and principals seemed more positive about their communities' characteristics.

Intervening Informal Variables -- The fifth ancillary question which was investigated was:

> (5) What is the relationship between each intervening, informal organizational variable and the degree to which the organizational component is successfully institutionalized.

Four variables (an integrative informal communication network, staff feeling of influence and importance in determining educational programs and policies, high staff cooperation, and varied geographical background of staff) were analyzed. Table XVI provides the aggregated data from which these questions were analyzed.

In general, most of the variables describing the informal organizational characteristics of a school/school district were not related to the institutionalization of MUS-E. The unit leaders of all the respondents were more positive about the informal organizational variables than any other group. Only the unit leaders described a variable (the staff's feeling of influence in helping to determine educational policies and programs) in direct relation to the institutionalization of MUS-E. It was thought that the weakness of these variables is partially explained by the lack of good measures for them. Staff cohesiveness, cooperation, open communication, etc. are difficult to measure accurately. The unit leaders probably described the variables more posi-

TABLE XVI

AGGREGATED ASSESSMENT OF TSTAT AND STEREG1 ITEM WEIGHTS FOR INTERVENING INFORMAL ORGANIZATIONAL VARIABLES

ITEM NO.	VARIABLE MEASURED	UT	UL	P	DC	S	REL. TO INSTITU.
	Staff Feel Influential:						
82	In educational policies	1	3	-	-	-	YES
83	In educational program	1	3	-	-	-	YES
	Integrative Communication:						
84	With different groups	2	2	1	1	2	NO
85	With own group	1	2	-	1	2	NO
	High staff cooperation:						
86	In school	1	2	2	-	-	NO
87	In school district	-	-	1	1	1	NO
	Varied geographical background of staff	Dropped out in pilot analysis					NO

KEY

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UT = Unit Teacher
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REL. TO INSTITU. = Relation to Institutionalization

tively than other groups, because the unit leader's role alone was one in which social relationships were more important than professional relativeships. To be effective, the unit leader (with a role halfway between unit teacher and principal) had to be aware of and concerned with the relationship within the unit.

Intervening Individual Variables -- The sixth ancillary question which was investigated was:

> (6) What is the relationship between each intervening, individual variable and the degree to which the organizational component is successfully institutionalized.

Intervening individual variables were analyzed for both administrators and individual users. For the administrator, eight variables (status and influence within the school district, persuasiveness, advanced graduate education, high interest and activity in professional association, high achievement orientation, concern for subordinates opinions, high awareness of recent developments in education, and concern for meeting often enough with subordinates) were analyzed. For the individual user, ten variables (moderate amount of teaching or administrative experience, tolerance and acceptance of change, low tenure in the system, advanced graduate training, high achievement orientation, tolerance and acceptance of ambiguity, tolerance and acceptance of autonomy, high feeling of own importance in helping to determine educational programs and policies within the school/school district, acceptance and liking for working with others, and, willingness to experiment with innovations) were analyzed. Table XVII

TABLE XVII

AGGREGATED ASSESSMENT OF TSTAT AND STEPREG1 ITEM WEIGHTS FOR INTERVENING INDIVIDUAL VARIABLES

ITEM NO.	VARIABLE MEASURED	UT	UL	P	DC	S	REL. TO INSTITU.
	Principal:						
88	Concern for subordinates opinions	1	1	-	-	-	NO
89	Meets with unit often enough	3	-	-	-	-	YES
90	High awareness of recent development	3	1	-	-	-	YES
91	High status and influence	2	3	-	-	-	YES
92	Persuasiveness	2	1	-	-	-	NO
93	High interest/activity in education	1	1	-	-	-	NO
	Superintendent:						
94	Informed of recent development	-	-	3	1	-	YES
95	Concern for subordinates opinions	-	-	1	1	-	NO
96	High status and influence	-	-	1	3	-	YES
97	Persuasiveness	-	-	2	1	-	NO
98	High interest/activity in education	-	-	2	3	-	YES
	Individual:						
99	Tolerance/acceptance of change	2	1	2	1	1	NO
100	Willing to experiment	1	2	1	1	1	NO
	Individual Feel Influential:						
101	In educational policies	1	1	1	1	-	NO
102	In educational programs	1	2	-	1	-	
103	Likes who works with	1	3	1	2	-	YES

TABLE XVII Continued

ITEM NO.	VARIABLE MEASURED	UT	UL	P	DC	S	REL. TO INSTITU.
	Acceptance of autonomy*	Dropped out in pilot analysis					NO
	High achievement orientation*	DISCRIM1 no support					NO
	Advanced education*	DISCRIM1 no support					NO
	Acceptance of ambiguity*	Dropped out in pilot analysis					NO
	Low tenure in system*	DISCRIM1 no support					NO
	Moderate amount of teach./admin.*	DISCRIM1 no support					NO
	Overall Administrator:						
	Concern subordinates opinions	1	1	1	1	-	NO
	Meets with unit often enough	3	-	-	-	-	YES
	High awareness of recent developments	3	1	-	-	-	YES
	High status and influence	2	3	1	3	-	YES
	Persuasiveness	2	1	2	1	-	NO
	High interest/activity in education	1	1	2	3	-	YES

KEY

3 = Strong Relation to Institutionalization
2 = Moderate Relation to Institutionalization
1 = Weak Relation to Institutionalization

Teach. = Teaching
Admin. = Administration

UT = Unit Teacher
UL = Unit Leader
P = Principal
DC = District Coorindator
S = Superintendent
REL. TO INSTITU. = Relation to Institutionalization

provides the aggregated data from which the questions were analyzed.

When the findings about the relationship of an administrator's role and institutionalization of MUS-E were compared, more similarities than dissimilarities were uncovered. For the principal, three of the six variables (the principal meets with the unit often enough, is informed about what is happening in education, and is influential in setting policies) and for the superintendent, three of the six variables (the superintendent is informed about what is happening in education, is influential in setting policies, and is active in professional meetings outside the school district) were directly related to the institutionalization of MUS-E. For both administrators, being perceived by their subordinates as influential and informed was directly related to the institutionalization of MUS-E. For neither administrator was being perceived as persuasive or valuing anothers opinion related to the institutionalization of MUS-E. In analysis, for both administrators, it seemed that variables related to professional issues (the perceived status, influence, and awareness of administrators) were more important in terms of the relation to institutionalization than varibles related to personal user issues (the valuing of users opinions or administrator's persuasiveness). Thus, due to the additional separation between superordinate and subordinate, subordinates seemed more responsive to professional relationships than personal relationships with their superordinates.

Of the two variables related to the individual user characteristics, only one variable (individual user likes colleagues with whom he works) was found to be directly related to the institutionalization of MUS-E. As in the informal organizational variables, only the unit leaders were positive about the individual user variables. Again, this might reflect their unique position within the multiunit school, rather than their individual perspective about the institutionalization of MUS-E. The weakness of these variables and the factor in general is supported by the findings of other studies (which have not found strong relationships between individual user variables and institutionalization of change programs) and the fact that the measures describing these variables have not yet been accurately developed so that the important underlying characteristics of these variables can be measured. For example, it might not be low tenure in a system which relates to institutionalization, but something related to low tenure which is itself related to institutionalization. In any case, most individual user variables are not directly related to institutionalization of MUS-E.

EXTENDED ANALYSES OF THE DATA

In this section, the items in each factor and questionnaire, the combination of items in each regression equation and the findings of the hypotheses and ancillary questions will be analyzed further and a tentative model of change will be proposed.

Reevaluation of the Items in the Questionnaires -- Although the item to test correlation coefficients were analyzed in terms of the relationship to institutionalization, the item to scale correlation coefficients were not analyzed in terms of the relationship to the factors. Since the findings for FACTOR2 and TSTAT factor scores seemed somewhat contradictory (with each proposing a different model for looking at change), further analysis of the relationship of items to the a priori factors is needed in order to lay the groundwork for later refinement and interpretation of the factors related to change.

To undertake this analysis, the items on each questionnaire assigned factor and to the institutionalization of MUS-E were listed (see Table XVIII) and compared across questionnaires.

All the items on each questionnaire which had a weak relationship to their factor also had a weak relationship to institutionalization of MUS-E. Across the questionnaires (for three or more groups when five re-

TABLE XVIII

ITEMS ON EACH QUESTIONNAIRE WHICH ARE WEAKLY RELATED (CORRELATION COEFFICIENT OF <.40) TO THEIR SCALE AND INSTITUTIONALIZATION OF MUS-E

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
	Dependent Variables					
4	MUS-E has helped individuals like me be more effective in their role			x		
	Attributes of MUS-E					
9	Community residents approve of MUS-E				x	
12	Personnel in school district approve of MUS-E				x	
13	District coordinator approves of MUS-E			x		
15	Initial results of MUS-E were rewarding in their effect on learning	x	x			
	Process of Change					
19	The objective of MUS-E were initially described			x	x	
20	The research findings of the effects of MUS-E elsewhere were initially provided				x	
22	Inservice programs helped individuals set up MUS-E					x
24	Sufficient funds were provided to schools setting up MUS-E			x		
27	Individual received feedback from superintendent about role in setting up MUS-E			x		

TABLE XVIII Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
28	Individual was kept informed of activities of other organizational units in setting up MUS-E		x		x	
30	Individual was involved in depth in setting up MUS-E			x	x	
32	Individual was allowed initiative in setting up MUS-E	x	x	x	x	
34	Necessary organizational meetings were scheduled when problems with MUS-E arose			x		
	Agents of Change					
44	Principal provided individual(s) with necessary kinds of assistance for adapting to MUS-E		x			
49	District coordinator was concerned with what I thought about MUS-E			x		
54	District coordinator met often enough with individual(s) (i.e. once a week)			x		
55	Superintendent spent adequate time with me in helping me set up the MUS-E			x		
56	Superintendent supported my efforts in setting up the MUS-E				x	
58	Superintendent provided me with necessary kinds of assistance for adapting to MUS-E				x	
60	Superintendent encouraged individuals to experiment with new innovations				x	

TABLE XVIII Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
61	Superintendent provided me with information about how to set up MUS-E			x		
	Formal School or School District and Community					
63	There are not many rules and procedures in the school district				x	x
64	There are not many rules and procedures in the school			x		
65	Individual must communicate with colleagues to do work				x	
67	Individual must communicate with immediate subordinate to do work		x		x	
68	Individual has freedom to control events that influence his job					x
69	Superordinates do not have conflicting expectations for individual's performance				x	x
70	The individual is held accountable for children's educational achievement in his organization				x	
71	Individual talks often enough (i.e. an hour a week) with superordinate about job			x		
72	School or school district has services of varied professionals			x	x	x
74	Unit teachers teach in a particular subject area	x	x			

TABLE XVIII Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
103	Individual likes colleagues with whom he works	x				

KEY:

UT = Unit Teacher
UL = Unit Leader
P = Principal
DC = District Coorindator
S = Superintendent

sponded) many similar items were listed. In the category of attributes of MUS-E, the variable describing the initial results of MUS-E was listed. In the category of attributes of the process of changing, the variables describing the initial objectives of MUS-E, the degree to which the individual was informed of others' activities, the individual's depth of involvement in the process, and the individual's allowance of initiative in setting up the process were listed. No variables from the category of agents of change were on the comparative list. In the category of formal organizational variables, the variables describing low formalization in the school district, whether or not individuals must communicate with their subordinates, high complexity of the school district, whether or not teachers teach special subjects, and residents of the community's involvement in schools were on the list. There were no items in either category describing informal organizational variables or individual user variables.

Before it could be concluded that these items (described above) should be dropped from studies of change, this comparative list of weakly related variables was compared to the list of strongly related variables (see Tables XII through XVII). When these lists were compared, a problem discovered before re-emerged. Except for two variables (allowance of individual initiative and community's involvement in schools), the variables on both lists compared perfectly; what several groups described as related to institutionalization, several other groups described as not related to institutionalization. This provided the researcher with a problem; so, before variables could be removed from further analysis, a rationale had to be developed which would account for the different relationships of the same variable concept.

If this rationale was developed, some general theoretical recommendations could be made as to what type of items could be removed from further analysis. The framework could be applied to the development of a model of change and studies in the future could refine their analyses where this study finished. At the same time, another area of analysis provided for in this section (the meaning of the findings) could also be brought into focus.

In general, a rationale could be developed which viewed the components of change according to the individuals involved in the change rather than according to the elements of change. Each respondent group viewed the institutionalization of MUS-E differently depending on: (1) their particular role (tasks and duties performed) in the institutionalization process; (2) their proximity to the daily activities of the process; (3) their position in the school district; (4) the amount of information they had first or second hand about institutionalization; (5) how they were affected by MUS-E; and (6) their liking for MUS-E. Specifically, it seemed that the superintendent was not equally important throughout all stages of the institutionalization process. In general, he did not even view himself as important to the process as he was not greatly affected by the process itself. He was not generally viewed as a change agent by his subordinates (principal and district coordinator), but rather he was viewed as being informed, active, and influential, all characteristics which initially would be important for bringing a change program to a school district rather than maintaining it. With this perspective in mind, the superintendent would be more likely to know about the initial "decision to adopt" process than the maintenance and routinization process. Thus, if one wanted to learn about institutionalization from the superintendent, one would not ask him about items which related to the specific routinization process (i.e. - inservice program) or characteristics of the school district's organization (formal or informal). Instead one would ask him about items which related to the attributes of MUS-E, and the relative advantage of MUS-E as these are items which more clearly describe the "decision to adopt" process.

Unlike the superintendent, the district coordinator was in a slightly different position with respect to the institutionalization of MUS-E. It was his assigned duty to work to institutionalize MUS-E. In districts with more than four or five schools, he was directly affected by the success achieved in the process of institutionalization. Indeed, of all the internal agents of change, the unit teachers and unit leaders thought more of the district coordinator's role in institutionalization of MUS-E than the principal's or unit leader's role. Possibly, there are some reasons for this; the unit teacher was too close to the unit leader to see him/her as an agent of change and the unit leader was too close to the principal. Also, sometimes, external help (information, planned meetings, etc.) is more easily received than internal organizational help. Also, the district coordinator's special position as multiunit consultant or implementation expert placed him in a unique position helping him (potentially) to be more effective within the school. For these and other reasons, the district coordinator would be more likely to be related to the institutionalization process as an agent of change. Thus, if one wanted to know about institutionalization from the district coordinator, items which related to his role in the process of institutionalization in the schools, his role in the process of institutionalization in the school district, his relationships to the principal, unit leaders and unit teachers, and his characteristics as a consultant in the schools would be valuable.

The MUS-E principal also was in a unique position in relation to the institutionalization of MUS-E. He was and was perceived as both an administrator and a change agent of MUS-E. His role in school, however, as a leader was challenged by both the district coordinator and the Instructional Improvement Committee (IIC). Thus, it was not unreasonable to find that, of all the respondent groups, he perceived MUS-E, the amount of support he received from the district, the process of institutionalization, and the district coordinator's role in the least favorable way. Since his role was being negatively affected by MUS-E, he seemed to have different goals (i.e.

desire to attain personal support) than the other groups involved in the institutionalization of MUS-E. If one wanted to learn about the institutionalization of MUS-E from the principal, items which related to his role in the school (before and after MUS-E), his conflicting roles and responsibilities as administrator and agent of change, and his relationships to the district coordinator, unit leader, and unit teacher, would be valuable.

The unit leader's role was one also created by MUS-E. The role was one between that of teacher and administrator. As such (like the principal and district coordinator) the role was complex and often conflicting. In regard to the institutionalization of MUS-E, the unit leader had diverse expectations placed on him, as he had to guide and work in his own unit as well as guide the school in institutionalizing MUS-E. Despite these pressures, however, the unit leader (next to the unit teacher) was the most positive of the respondent groups about the attributes of MUS-E, the process of changing, the roles of the agent of change, and the formal organizational variables. He was the most positive of the respondent groups about the informal organizational variables. If one wanted to learn about institutionalization of MUS-E from the unit leader, items which related to his role in the unit and in the IIC, his conflicting roles as agent of change and administrator, his involvement in the process of change, his relations with the unit teacher and principal and the formal and informal organizational climate of the school would be valuable. Perhaps the unit leader (more than any other group) had the potential for having a balanced perspective with much diverse information about the internal structure of the school. Since he was not as removed from the unit teacher as the principal he was involved in the detailed daily activities of his unit. Also, since he was not removed from the principal, be was involved in determining the general policies of the school. As someone with two kinds of perspectives, he might possess valuable information about the conflict in these two situations.

The final individual involved in the institutionalization of MUS-E was the unit teacher himself. He was the actual target and user of change and (as such) was the one most directly involved with the change process. In general, the unit teacher was of all the respondent groups most positive about the attributes of MUS-E, the process of changing, the agents of change, and the formal organizational variables. If one wanted to learn about MUS-E from him, items related to those categories (mentioned above) as well as to his specific relations with the unit leader and the principal would be valuable. Unit teachers (of all the respondent groups) were invaluable informants about the process of change in their unit, but less informed about the process of change in the school.

If this rationale and review of the varied respondent groups' relations to MUS-E is applied to an analysis of the items in the questionnaires, many changes would be made in the questionnaires. First, only a few of the factors of change would be included in each questionnaire. Rather than searching to find corroboration of information across respondent groups, questionnaires would instead seek to obtain information which only one group had knowledge about or specific involvement in. Second, many more items which related to the conflicts between individual's roles and perceptions would be added to the questionnaires to see how these conflicts related to the process of changing and what measures were used to deal with them. Third, factors would be specificially described for the individual respondent groups rather than generally described for all respondent groups. Only descriptions about the process of change would still be asked of all groups.

Item Clusters in STEPREG1 Equations -- When the items in each final regression model were individually analyzed for each questionnaire, few real meaningful relationships were discovered. Most of the clusters of variables internal to the equation seemed diverse and sometimes random. Often items with both weak and strong correlation coefficients (see Appendix G) were included in the final model. If any trend was discovered, however, it was that many of the items in each model were those which the respondent was concerned with or possessed more direct information about. For example, the unit teacher had more items in his model from the process of change and the organizational variables than any other groups. This possibly reflected his concern with the environment in which he worked and the way he worked to institutionalize MUS-E. The superintendent had more items in his model from the attributes of MUS-E than any other group and second to the most items from the process of change. This possibly reflected his major concern with MUS-E and the process of institutionalization since he was the one who had to justify MUS-E to the school board and community. The other respondent groups had less obvious item sets.

Since little was learned from analyzing the STEPREG1 equations separately, the equations were compared across the questionnaires. (See Table XIX for a description of the final sets of variables across the questionnares.) There were several ways in which this was done. First, similar items in more than two models, were identified and analyzed. It was thought that these similarities across groups might reflect an underlying set of items (variables) which cut across the differences in the roles, positions (etc.) of the respondent groups. Two groups of variables were identified. The variables related to the initial results of MUS-E, the complexity of the school district, and the high accountability of the individuals were in the final regression model of four respondent groups. The variables related to the simplicity of MUS-E, the degree to which individuals communicated with their colleagues, the degree to which the individual participated in decision making, and the degree to which the community was cosmopolitan and willing to pay for most programs, were in the final regression model for three respondent groups. When these variables were analyzed, similarities in these sets of variables and the factors analyzed by FACTOR2 were found. In general, both groups of variables seemed to be more related to the environment of change than to individual roles and tasks. Also, the variables in these compared equations were only from three categories: the attributes of MUS-E, the process of changing, and the formal organizational structure.

TABLE XIX

CONCEPT DESCRIPTION OF FINAL SETS OF VARIABLES FROM STEPREG1 FOR EACH QUESTIONNAIRE

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
	Dependent Variables					
	Attributes of MUS-E					
7	Principal approves of MUS-E	x	x			
8	Teachers approve of MUS-E	x				
9	Community residents approve of MUS-E				x	
10	Individual ("I") approves of MUS-E	x			x	
12	Personnel in school district approve of MUS-E					x
14	School board members approve of MUS-E					x
15	Initial results of MUS-E were rewarding in their effect on learning		x	x	x	x
16	It was easy to adapt to MUS-E	x				x
17	It did not take too much time to adapt to MUS-E					x
18	The principles and components of MUS-E are easy to understand.		x		x	x

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
	Process of Change					
19	The objectives of MUS-E were initially described	x	x			
20	The research findings of the effects of MUS-E elsewhere were initially provided	x		x		
21	Orientation workshops helped me to understand MUS-E		x	x		
22	Inservice programs helped individuals set up MUS-E	x				
24	Sufficient funds were provided to schools setting up MUS-E					x
27	Individual received feedback from superintendent about role in setting up MUS-E					x
28	Individual was kept informed of activities of other organizational units in setting up MUS-E	x			x	x
29	Individual was adequately involved in setting up MUS-E					x
30	Individual was involved in depth in setting up MUS-E		x			
31	Decisions about setting up MUS-E were shared		x			
32	Individual was allowed initiative in setting up MUS-E	x	x			

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
33	Needed MUS-E materials were supplied on time	x				
34	Necessary organization of meetings were scheduled when problems with MUS-E arose					x
36	Setting of MUS-E has not presented collective bargaining problems					
	Agents of Change					
37	Unit leader spent adequate time with me in helping me adapt to the MUS-E	x				
43	Principal spent adequate time with individual(s) in helping them adapt to the MUS-E		x			
45	Principal was concerned with what I thought about the MUS-E	x	x			
46	Principal encouraged unit leader to work with specialists coming into school		x			
47	Principal encouraged unit leaders to experiment with new innovations		x			
50	District coordinator provided information about how to set up MUS-E	x				
52	District Coordinator supported individual(s) efforts to adapt to MUS-E	x	x			
54	District Coordinator met often enough with individual(s) (i.e. once a week)	x	x			

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
55	Superintendent spent adequate time with me in helping me set up the MUS-E			x		
59	Superintendent encouraged me to work with outside specialists			x		
60	Superintendent encouraged individuals to experiment with new innovations			x		
61	Superintendent provided me with information about how to set up MUS-E				x	
	Formal School or School District					
64	There are not many rules and procedures in the school	x				
65	Individual must communicate with colleagues to do work	x	x			
66	Individual must communicate with immediate superordinate to do work	x	x		x	
67	Individual must communicate with immediate subordinate to do work				x	
70	The individual is held accountable for chidren's educational achievement in his organization	x		x	x	

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
71	Individual talks often enough (i.e. an hour a week) with superordinate about job				x	x
72	School or school district has services of varied professionals			x		
73	There are different kinds of jobs for individuals like me in the school organization	x		x	x	x
74	Unit teachers teach in a particular subject area	x				
75	Individual participates in decision making in the development of new curricula, procedures and policies and adoption of new programs	x	x			
76	Individual participates in decision making by exchanging information and developing, selecting, implementing, and evaluating solutions to problems				x	
77	School district meetings are scheduled often enough to deal with problems which occur in school district				x	

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S	
	Community						
78	Residents of school community are cosmopolitan	x	x			x	
79	Residents of school community are willing to pay for most educational programs	x		x		x	
81	There is an effective local civil government in this school district			x	x		
	Informal School or School District						
82	Teachers in school can influence educational policies of school district		x				
83	Teachers in school can influence educational program in school		x				
84	Communication with individuals in different units (department, etc.) is open					x	
85	Communication with individuals in same unit (department, etc.) is open						x

TABLE XIX Continued

ITEM NO.	DESCRIPTION	UT	UL	P	DC	S
	Administrative Characteristics					
89	Principal meets with the unit often enough (i.e. more than an hour a week)	x				
90	Principal is informed about what is happening in education	x				
91	Principal is influential in setting policies in school district	x	x			
94	Superintendent is informed about what is happening in education			x		
96	Superintendent is influential in setting policies in this school district				x	
98	Superintendent is active in professional meetings and conferences outside this school district				x	
	Individual User					
99	Individual is pleased with innovations in curricula, teaching methods, school procedures, educational goals, and organizational structures			x		
103	Individual likes colleagues with whom he works		x			

Possibly, these three factors were underlying factors which related to institutionalization of MUS-E across all respondent groups.

The second analysis which was performed was one in which similar items across two groups were listed and analyzed. The unit teacher and unit leader had more items of agreement (twelve) than any other paired groups. This was expected since these two groups were closer together in relation to their position and proximity to the process of change than any other paired respondent groups. Unit teachers and unit leaders were paired on the following set of variables: the principal approves of MUS-E, the objectives of MUS-E were initially described, the individual was allowed initiative in setting up MUS-E, the principal was concerned with user attitudes, the district coordinator supported individual's efforts, the district coordinator met often with users, there are not many rules in school, individuals must communicate with colleagues and superordinatres, the individual participates in decision making, the community is cosmopolitan, and the principal is influential. Characteristics related to an open, supportive, participative school environment seemed to be described by these variables. Since unit teachers and unit leaders were really the two groups of individuals who were most involved in institutionalization, it was not surprising that variables related to a facilitative environment of change were included in their final regression equation.

The only other respondent groups which seemed to have paired items were the district coordinator and superintendent. These groups had five items of agreement: initial results of MUS-E were rewarding, MUS-E was simple to understand, individuals were kept informed, the individual is held accountable, and there is high complexity in the school district. These items seemed to be those which did not provide much information about MUS-E or the environment of change. In fact, they could easily reflect the roles played by individuals only indirectly related to the change process in the schools.

Overall, it seemed that the STEPREG1 model equations demonstrated the diverse set of variables used to describe the institutionalization of MUS-E. Except for the common characteristics already described, it seemed that the diverse contribution of each group was needed in order to understand and interpret the institutionalization of MUS-E.

DEVELOPMENT OF A MODEL OF CHANGE

In this section the information learned from MUS-E was used to develop a theoretical framework for looking at educational change in general. To do this, strategies and situations which and individuals who seemed related only to MUS-E were excluded from analysis. The model of change which was developed from this study was one far more changeable and far less refined than initially thought. Essentially, this model was different from change models described elsewhere. It was relative to the individuals who related to the institutionalization process, descriptive of different categories of variables across different individuals, and yet composed of certain sets of variables which described a large amount of variance of the process of changing. In general, this model is not a constant model of change which can be used for all groups of individuals in an organization. In fact, because different respondent groups have different roles, positions, information channels, and relations; a constant model of change would inaccurately reflect their situation in relation to the institutionalization of change. Thus, the model of change which should be developed across respondent groups is a dynamic one which relates to and accounts for the unique situation in which each individual group is placed. Since the perspectives of each group are important in gaining an understanding of the complex nature of change, they have to be measured accurately so that the change process can be more thoroughly understood.

First, there are three groups of individuals (superintendents, principals and teachers) who being especially important to change, represent many of the varied perspectives about change. Usually, the superintendent is more involved in the initial implementation phase than in the maintenance and routinization phase. Thus, elements of change which should be related to his role in institutionalization are those describing the character of the change itself, the marketing or diffusion techniques used by the change's developers and the superintendent's responses to them, the pressure groups internal and external to the school district, the decision making and information processing strategies and rationale used by the superintendent in reaching a decision about the change, and the degree, kind, and amount of involvement and continued effort the superintendent makes after the change is adopted. An individual who assumes a role in relation to change similar to that of the superintendent would likely have these same perspectives.

Usually, the principal is more involved in the later stages of the institutionalization phase than in the early stages. Because of his position as building principal, he is both an administrator and agent of change. Thus, elements of change which should be related to his role are those describing his role in the school (before and during a change process), the conflicting roles and responsibilities he faces as agent and administrator of change, his relationship to the district office, his relationship to the teacher and students within his building, and the degree, kind, and amount of involvement he has in the process of change in his school. An individual who assumes a role (in relation to change) similar to that of the principal would likely have these same perspectives.

Usually the individual teacher is the main target and focus for a change program. As such, the teacher is the one individual who is directly involved in the detailed set of daily activities which make up the process of institutionalization (from adoption, implementation, to routinization). Elements of change which should be related to his role are those describing the process itself, his relation to the principal, outside consultants, and colleagues, the informal and formal structure of the school organization, his individual personality characteristics, his attitude about the change, and his attitudes about the agents of change. An individual who assumes a role similar to that of the teacher would likely have these same perspectives.

The second element of this model has been partially described earlier since it related to the individual differences of the respondent groups. Essentially, though, the categories of variables which describe a process of institutionalization in an organization are viewed as varied rather than constant across the groups within the organization. Only three categories of change: the process of change (in various stages), the attributes of the change, and the structural (formal or informal) arrangements of the organization undergoing the change are constant across the groups within and organization. The other categories of change are varied reflecting the individual's role, position, amount of information, and involvement in institutionalization.

Despite the differences in the categories for each group of respondents, certain common and important sets of variables should be analyzed across all groups of respondents. Information on variables describing: the perceived relative advantage, observability, and simplicity of the change; the degree to which the individual was informed of and involved, and supported in the change process; the way and degree to which the individual communicated with others; and the way and degree to which the organization is complex and less formalized should be gathered and analyzed for all groups in the process of institutionalization.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The summary, major conclusions, and implications of the study are presented in this section. It is hoped that the major conclusions and implications provide both theoretical and practical analyses of the elements of institutionalization. Support for each of these sections is found in earlier chapters.

SUMMARY

The purpose of this study was to: (1) identify some of the variables and critical clusters of those variables of change related to the successful institutionalization of the organizational component of the multiunit elementary school; and, (2) begin to identify those elements of change implicitly involved in the successful institutionalization of educational change in general. The variables selected for study were those variables of change which were most often studied by change theorists, system analysts, and behavioral scientists.

To provide for these analyses, several descriptive change questionnaires were designed and distributed to a selected sample of unit teachers, unit leaders, principals, district coordinators and superintendents in multiunit elementary schools and school district across the country. Before the questionnaires were distributed, they were judged for content and format construct validity and piloted for determination of their reliability estimates.

When the questionnaires were returned, four major analyses were performed on the data contained in each of them. Programs TSTAT, FACTOR2, STEPREG1, and DISCRIM1 were used in these analyses. Through TSTAT, reliability estimates were obtained on the items alone, the items in clusters (as identified a priori), and the total questionnaires. The reliability estimates for the total questionnaires were between .83 and .95.

Through FACTOR2, a factor analysis with orthogonal axis rotation and a backword selection technique was run on the data to identify those variables which tended to cluster together to form distinct underlying factors affecting successful institutionalizations of MUS-E. Unexpectedly, the a priori factors (elements of MUS-E, process of changing, agents of change, formal and informal structural variables, and individual variables) were not similar to those factors identified by FACTOR2. FACTOR2 factors described elements of change relating to: open and supportive environments, individual personal liking for MUS-E, individual cost-benefit ratios, use of open communication channels, use of supportive mechanisms, flexibility of the change process, and low formalization of the school/school district. These factors were related, however, to the clusters of variables defined by the STEPREG1 analysis.

Through STEPREG1, a stepwise multiple regression analysis was run on each item in each questionnaire to identify the amount of variance which could be attributed to the best combination of these items in predicting the successful institutionalization of MUS-E. Between 54 and 84 percent of the variance was predicted by the various combinations of variables in each equation model. The variables contributing to the predicted variance were those relating to: (1) the ease, trialability, and observability of MUS-E itself; (2) the clearly specified objectives, available research findings, high degree that user was informed of others activities, and high degree that user was allowed initiative in the process of changing: (3) the frequency with which the user met with the agents of change; the high concern for the user's attitude, and the high support for the user's efforts to adapt to MUS-E on the part of the agents of change; and, (4) the high degree to which individuals communicated with superordinates and peers, the high degree to which the user was held accountable; the high degree of school district complexity, the high degree of individual participation in decision making, and the characteristics of a community which was cosmopolitan and willing to pay for education and had an effective civil government in the formal organizational variables.

Through DISCRIM1, a one way analysis of variance was run on several variables (years of teaching and administrative experience in the school district, educational level, and achievement aspiration) related to the individual nature of the respondents. No significant differences in terms of the relationship between individual differences in respondent type and institutionalization of MUS-E were found.

After the analysis, a tentative theoretical model for determining how to bring about the successful institutionalization of change programs in general was developed. The change model which was developed possessed three characteristics which other change models did not usually possess. First, the model was dynamic not constant and rigid for each different type of individual involved in change. The model tried to reflect the different perspectives that the different organizational groups would have about change. Second, the model described only three factors (the elements of the process of change, attributes of change, and structural arrangement of the organization undergoing change) across all groups of respondents. The other factors of change described by the model related to the specific roles and relations of the major groups involved in a change. Third, the model described a few common variables about which information was needed in order to understand the change process. Information was needed about: the perceived relative advantage, observability, and simplicity of the change; the degree to which the individual was informed, involved, and supported in the change process; the way and degree to which the individual communicated with others; and the way and degree to which the organization was complex and less formalized.

CONCLUSIONS

Four major conclusions were developed from the analysis of the findings in the study. Each conclusion was useful in helping to understand the nature of change.

First, it was concluded that the a priori factors of change (attributes of a change process of changing, and agents of change and intervening variables of formal and informal structure and individual administrator and user) were useful in describing a large amount of the variance related to the institutionalization of MUS-E. Although the factors did not provide concrete, distinct sets of variables (e.g. the variables across the factors were correlated), they did provide a simple diagnostic tool for viewing the different levels of change.

Second, it was concluded that individuals within a school district viewed a change program differently depending on their role in institutionalization, their position in the district, their proximity to the change process, their liking for the change program, the way they were affected by the change program, and, the amount of information they had about the change program. In order to obtain useful, valid information about a change program in any organization; the different perspective of each of the groups in that organization would have to be measured.

Third, it was concluded that measures of institutionalization should not try to predict across all groups but should try to predict for a particular group. First, measures should be diverse, and varied and used selectively to obtain the information which a particular group has (rather than should have) about institutionalization. Second, measures for each group should be integrated so that the entire complex process can be understood. Information does not have to be confirmed, corroborated, or standardized in order to be useful. In fact, information of diverse nature may be more useful as it may be a better approximation of the process of change. In general, questions about only three categories of change: the process of change, the attributes of the change, and the formal or informal organization arrangement of the organization in which individuals work (when they are working to institutionalize a change) need to be asked of all groups. Questions about other categories are particular to the individual group and reflect the nature of the group's relation to institutionalization.

Fourth, it was concluded that certain general variables of change were important to the understanding of change and did relate to individual perspectives across all groups. The variables describing: the perceived relative advantage, observability, and simplicity of the change; the degree to which the individual was informed of, involved, and supported in the change process; the way and degree to which the individual communicated with others; and the way and degree to which the organization was complex and less formalized, were important to institutionalization. Individuals seeking to measure institutionalization of a change program should try to include measures for these variables.

IMPLICATIONS

Three different sets of implications are drawn from the findings and conclusions of this study. Implications for practical application in the institutionalization of MUS-E, for change theory in general, and for further research are discussed.

Implications for Practical Application -- Four implications related to successful institutionalization of MUS-E are discussed in this section. It is thought that schools can be more successful in institutionalizing MUS-E if they: (1) eliminate certain role conflicts highlighted in this study; (2) involve administrators more directly in the process of institutionalization; (3) set up mechanisms to help each role group, encourage each role group to become acquainted with the perspectives of the other groups; and, (4) institutionalize those characteristics of a facilitative change environment which were described in this study.

First, the overlapping school responsibilities as consultant to the change process of the district coordinator and the principal (as identified in the study) need to be eliminated so that the two individuals can work together to institutionalize MUS-E. The role each individual should assume(as an agent of change) should be formally and clearly defined so that neither feels threatened by the presence of the other. The principal and district coordinator (more than any other group) described their role in MUS-E, and their relationship to each other in a negative way. Also, the internal role conflict of both the unit leader and principal (in working as an agent and administrator of change) should be eliminated so that they can be more effective in their roles of supporting the change effort. The subordinates of both the unit leader (i.e., the unit teacher) and the principal (i.e., the unit leader) were inconsistent in viewing the roles of their superiors and this caused them difficulty in believing that they were adequately supported in their own roles. Before these roles can change, however, further analysis of the role requirements of agent's and administrator's of change need to be undertaken.

Second, the principal and district coordinator should be kept more informed of the daily school activities related to institutionalization of MUS-E and the superintendent should be kept more informed of the global school/school district activities related to institutionalization. If the principal and district coordinator are kept informed, they can more easily provide assistance and support when or before problems occur, rather than when scheduled meetings allow for them to "occur" (be discussed). Similarly, if the superintendent is kept informed, he can more easily deal with the external barriers to the institutionalization of MUS-E (i.e., attaining needed resources, gaining community acceptance, etc.). In this study, all three groups of individuals indicated that they wanted to be kept more informed about the process of institutionalization. (Both the unit teacher and unit leader described institutionalization in relation to being informed of other groups activities.)

Third, the different perspectives each group had about the institutionalization of MUS-E should be discussed openly in each school/school district so that each group will be aware of how the other groups' view that program and process. If group differences are presented and discussed openly, each group can begin to appreciate the views of the other group and begin to accept the different courses of action (as identified in the study) followed by the other groups. Common understanding often brings acceptance of existing differences, when formally, the differences may have disrupted the entire process of change. Differences in perceptions existed between unit teachers, unit leaders and principals in each school and school respondents and school district respondents. Although these differences may be viable, they appear to be disrupting the process of change.

Fourth, school districts interested in successfully institutionalizing MUS-E should: (1) initially present MUS-E to the staff so that they perceive that it is easy to understand and use, and clearly more advantageous than the present system; (2) keep individuals adequately (by their own definitions) informed, involved, and supported in the change process; (3) develop vertical and horizontal communication channels within the school district and reward individuals for using them; (4) obtain the necessary supportive services to support the change effort; and, (5) relax school rules and procedures to allow individual's greater flexibility in experimenting with the new requirements of MUS-E. These individuals who described MUS-E as institutionalized in their school district also described the above characteristics as representative of their institutionalization efforts.

Implications for Change Theory -- In general, the findings in this study supported the individual findings of other change studies. First, the findings of this study corroborated the findings of other studies as most of the variables describing attributes of a change, the process of changing, the agents of change, the formal organizational structure, and the role of the administrator in the change effort were related to successful institutionalization.

Most of the variables in these categories (described above) had been described by one or more of the respondent groups in direct relationship to institutionalization of MUS-E. Only those variables which seemed to represent less important services (i.e., materials received on-time) or events somewhat removed from the usual activities of the user (i.e., problem meetings scheduled when needed) were not described in direct relationship to institutionalization. This supported the priorities described by change studies which found more support for variables related to the user's normal course of activities than variables removed from the normal course of activities. Although the variables describing informal organizational structure and individual users were not described in relationship to institutionalization, most change studies (also) did not obtain definite findings about these variables. The measures for these variables (as mentioned by change theorists) seems less refined and less able to descriminate between respondents.

Second, however, the findings of this study contradicted the findings of change studies which attempted to develop a standardized view about change. Many studies have described their findings about change in relation to the entire organization, rather than in terms of each particular group in the organization. The findings from this study stressed the importance of viewing the different groups' perspectives about change separately in order to obtain valid information from each group which could be integrated to understand the complex process of change. It is thought that change studies err if they generalize too much to a mean perception. Possibly, change could be understood more by analyzing the differences in the perspectives of each group rather than generalizing over these differences.

Third, these findings supported the current thrust of the most noted change theorists (Havelock, Miles, and Schmuck) who have recently concluded (see the section on the literature review) that it is more important to analyze the particular structure needed in an organization when change is to occur rather than to apply (for example) centralization or decentralization because of a priori findings. The recent use of OD technology (espoused by Schmuck and Miles) and the recent proposed use of trained educational extension agents (espoused by Havelock) are processes which follow general change guidelines only in accounting for the particular situation in each organization undertaking a change. The general guidelines suggested by this study (i.e., packaging the change so that it is perceived to have a relative advantage and be simple and easy to use; involving, informing, and supporting the user in his change efforts; and encouraging the use of open communication channels) are also suggested in OD strategies and extension agent strategies.

Implications for Further Research -- Six recommendations are made about the kind of research needed to help support and extend the present utility of this study.

First, the model of change proposed by this study should be tested to see if in fact different measures for different individuals can be put together to understand the nature of change in a single school district. The rationale used in this study should be followed.

Second, more studies on the nature of the factors of change should be undertaken. Of particular importance should be studies which try to deal with orthogonal factors of change, since these factors may explain more or a different type of variance involved in the process of institutionalization. The discrete set of factors obtained from this study could be used as a starting point in developing these studies.

Third, a decision model should be developed to help predict the institutionalization of change from an aggregate of different items and different variables across different groups of respondents. It is possible that such an aggregation of items, variables, and respondents would lead to greater predictability of institutionalization.

Fourth, different sets of regression models should be developed and tested for different stages of the institutionalization process. Models related to the adaption, the implementation, and the routinization stages of the process of institutionalization should be developed and compared and their predictability to actual situations should be analyzed.

Fifth, the measures for some of the variables (especially individual user and informal organizational variables) need to be refined and validated through rigorous construct validity procedures. The items described in this study as important across all groups should be refined initially.

Sixth, the exact relationships between the items of change and institutionalization (i.e., whether they are linear, exponential, or curvi-linear) should be discovered and applied to understanding the nature of change. Questions such as what is sufficient decentralization of decision making should be answered.

Individuals interested in a scenario treatment of the institutionalization of change programs in general may see Appendix M at the end of the study.

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APPENDICES

Appendices C, D, E, F, G, H, I, J, K, and L have been omitted from this publication, but are available on microfilm from Memorial Library, University of Wisconsin, Madison, Wisconsin.

APPENDIX A

POPULATION OF MULTIUNIT SCHOOL DISTRICTS

SCHOOL DISTRICT BY STATE	NUMBER OF SCHOOLS	AGREED TO PARTICIPATE
California		
1. Belmont Public Schools	1	YES
2. Hillsborough City Schools	1	YES
3. Neward Unified Schools	1	YES
4. Oakland City School	1	NO
5. Ravenswood City Schools	2	YES
Colorado		
6. Cherry Creek Public Schools	2	YES
7. Clear Creek Public Schools	2	YES
8. Denver Public Schools	1	YES
9. Archdiocese of Denver Schools	1	YES
10. Durango Public Schools	2	YES
11. Englewood Public Schools	1	YES
12. Harrison Public Schools	1	YES
13. Jefferson County Public Schools	3	YES
14. La Veta Public Schools	1	YES
15. Park County Public Schools No. 1	1	YES
16. Poudre Public Schools	2	YES
17. Pueblo City Schools	4	YES
18. Pueblo County Schools	2	YES
19. *Rocky Ford Public Schools	2	YES
20. South Routt Public Schools	1	YES

*Agreed to participate, but returned questionnaires

21.	Thompson Public Schools	1	YES
22.	Walsenburg Parochial Schools	1	YES
23.	Weld County Public Schools	5	YES
24.	Weld County Reorganizaed Schools District RE-1	2	NO
25.	Widefield Public Schools	1	YES
	Connecticut		
26.	Avon Public Schools	1	YES
27.	Bloomfield Public Schools	5	YES
28.	East Granby Public Schools	1	YES
29.	East Hartford Public Schools	2	YES
30.	East Windsor Public Schools	1	YES
31.	Farmington Public Schools	1	YES
32.	Glastonbury Public Schools	1	NO
33.	Granby Public Schools	1	YES
34.	Manchester Public Schools	2	YES
35.	*Plainville Public Schools	1	YES
36.	Rocky Hill Public Schools	2	NO
37.	Simsbury Public Schools	1	YES
38.	Southington Public Schools	1	YES
39.	*Wethersfield Public Schools	1	YES
40.	Windsor Public Schools	3	YES
	Illinois		
41.	Bond County Community Unit (#2)	1	YES
42.	*Clinton Community Schools (#15)	1	YES

43.	Crystal Lake Schools (#47)	2	YES
44.	Divernon Community Schools (#13)	1	YES
45.	Downers Grove Public Schools (#58)	2	YES
46.	Edwardsville Public Schools (#1)	1	YES
47.	Evanston Public Schools (#65)	1	YES
48.	Evergreen Park Public Schools (#124)	4	YES
49.	Itasca Public Schools (#10)	1	YES
50.	*Jacksonville Public Schools (#117)	1	YES
51.	*Lincolnwood Public Schools (#74)	1	YES
52.	Lombard Public Schools (#44)	1	NO
53.	Marissa Public School (#40)	1	YES
54.	Markham Community School District (#144)	1	YES
55.	Medinah Public Schools	1	YES
56.	Moline Public School (#40)	5	NO
57.	*Mt. Morris Public Schools (#261)	1	YES
58.	Mundelein Public Schools (#75)	5	YES
59.	O'Fallon Community Schools (#90)	1	YES
60.	Oregon Community Schools (#220)	1	YES
61.	Pope County Schools (#1)	1	YES
62.	Quincy Public Schools (#172)	1	YES
63.	Roanoke-Benson Public Schools (#60)	1	YES
64.	Schaumburg-Roselle Schools (#54)	1	YES
65.	Tinley Park Public Schools (#146)	1	NO
66.	Troy Community Schools (#30)	1	YES
67.	Union Ridge Public Schools (#86)	1	YES
68.	Waterloo Community Schools (#5)	1	YES

69.	West Chicago Public Schools (#33)	1	YES
70.	Western Illinois University Laboratory School	1	YES
71.	Woodland Community Schools (#50)	1	YES
	Indiana		
72.	Gary Public Schools	3	NO
73.	Indianapolis Public Schools	20	NO
	Massachusetts		
74.	Byam Public Schools	1	YES
75.	Chelmsford Public Schools	1	YES
76.	Fitchburg Public Schools	1	YES
77.	Lawrence Public Schools	1	YES
78.	Littleton Public Schools	1	YES
79.	Methuen Public Schools	1	YES
80.	Tewsbury Public Schools	1	NO
81.	Tyngsboro Public Schools	1	YES
82.	Westford Public Schools	1	YES
83.	Wilmington Public Schools	3	YES
	Minnesota		
84.	Alexandria Public Schools (#206)	1	YES
85.	Atwater Public Schools (#341)	2	YES
86.	Boyd Public Schools	1	YES
87.	Brooten Public Schools	1	YES
88.	Buffalo Lake Public Schools (#647)	1	YES

89.	Centennial Public Schools (#12)	1	YES
90.	Dawson Public Schools	1	YES
91.	Granite Falls Public Schools (#894)	1	YES
92.	Hibbing Public Schools (#701)	1	YES
93.	Madison Public Schools (#377)	1	YES
94.	Montevideo Public Schools (#129)	1	YES
95.	Mounds View Public Schools (#621)	3	NO
96.	Pipestone Public Schools (#583)	1	YES
97.	Richfield Public Schools	1	YES
98.	Roseville Area Schools	1	YES
99.	St. Anthony Village Schools (#282)	1	YES
100.	Waconia Public Schools (#110)	1	YES
101.	White Bear Lake Public Schools	1	YES
102.	Willmar Public Schools (#347)	1	YES
103.	Worthington Public Schools (#518)	1	YES
	Nebraska		
104.	Lincoln Public Schools	9	NO
105.	Omaha Public Schools	1	YES
	New Jersey		
106.	Camden Public Schools	1	NO
107.	Chatham Borough Public Schools	1	YES
108.	Chatham Township Public Schools	1	NO
109.	Caldwell-West Caldwell Public Schools	1	YES

110.	Dover Public Schools	1	YES
111.	East Orange Public Schools	1	YES
112.	Glen Ridge Public Schools	1	NO
113.	Highland Park Public Schools	1	YES
114.	Lavallette Public Schools	1	NO
115.	Livingston Public Schools	1	YES
116.	Madison Township Public Schools	1	NO
117.	Middletown Township Public Schools	1	YES
118.	Newton Public Schools	1	YES
119.	North Brunswick Township Public Schools	1	YES
120.	*Paterson Public Schools	1	YES
121.	Pleasantville Public Schools	1	YES
122.	Pompton Lake Public Schools	1	NO
123.	*Red Bank Public Schools	1	YES
124.	River Edge Public Schools	1	YES
125.	Secaucus Public Schools	1	YES
126.	Trenton Public Schools	1	YES
127.	Ventnor City Public Schools	1	NO
128.	Vineland Public Schools	1	YES
129.	Wayne Township Public Schools	1	NO
130.	Wharton Borough Public Schools	1	YES

New York

131.	Falconer Central Schools	5	YES
132.	Niagara Falls Schools	1	NO
133.	Williamsville Central Schools	1	NO

Ohio

134.	Boardman Local Schools #1	1	YES
135.	Centerville City Schools	3	YES
136.	Liberty Local Schools	1	YES
137.	Toledo Public Schools	1	YES
138.	Warren Public Schools	1	YES
139.	Xenia Public Schools	3	NO
140.	Youngstown Diocese Schools	1	YES
141.	Youngstown Public Schools	1	YES

South Carolina

142.	Abbeville Public Schools	1	YES
143.	Aiken County Schools	2	YES
144.	Berkeley County Schools	1	YES
145.	Charleston County School District		
146.	Chester County Schools	1	YES
147.	Chesterfield County Schools	1	YES
148.	Columbia Public Schools	1	YES
149.	Darlington County School District		
150.	Greenville County Schools	1	YES
151.	Jasper Public Schools	1	YES
152.	Kershaw County Schools	1	YES
153.	Lancaster City Schools	1	YES
154.	Lexington County Schools	1	YES
155.	Richland County Schools (#1)	2	YES
156.	Richland County Schools (#2)	3	YES

157. *Sumter Public Schools	1	YES
Virginia		
158. Fairfax County Schools	1	YES
Wisconsin		
159. Algoma Public Schools	1	YES
160. ¢Appleton Public Schools	5	YES
161. Baraboo Public Schools	2	YES
162. Black River Falls Public Schools	1	YES
163. ¢Brodhead Public Schools	1	YES
164. ¢Cedarburg Public Schools	1	YES
165. Clintonville Public Schools	1	YES
166. Columbus Public Schools	1	YES
167. Cudahy Public Schools	2	YES
168. ¢Eau Claire Public Schools	1	NO
169. Edgerton Community Schools	1	NO
170. Fond du Lac Public Schools	5	YES
171. Gale-Ettrick Public Schools	1	YES
172. ¢Greenbay Public Schools	2	YES
173. Greendale Public Schools	4	YES
174. Greenwood Community Schools	1	YES
175. Hortonville Public Schools	1	NO
176. ¢Janesville Public Schools	7	YES

¢School districts in pilot sample; all others in study sample

177. Johnson Creek Public Schools	1	YES
178. Kaukauna Public Schools	2	YES
179. ¢Kenosha Unified Schools	1	YES
180. ¢LaCrosse Public Schools	5	YES
181. Little-Chute-Vandenbroek Public Schools	1	YES
182. ¢Manawa Public Schools	1	YES
183. Manitowoc Public Schools	1	YES
184. Mayville Public Schools	1	NO
185. McFarland Public Schools	2	NO
186. ¢Menasha Falls Public Schools	2	YES
187. ¢Menomonee Falls Public Schools	2	YES
188. ¢Menomonie Public Schools	3	NO
189. Milton Area Schools	3	NO
190. Milwaukee Public Schools	4	YES
191. ¢Neenah Public Schools	3	YES
192. Oak Creek-Franklin Public Schools	1	YES
193. Oconomowoc Public Schools	2	YES
194. Oregon Consolidated Schools	1	NO
195. Plymouth Public Schools	1	YES
196. Port Edwards Public Schools	1	YES
197. Racine County Unified Schools	1	YES
198. ¢Rhinelander Public Schools	1	YES
199. ¢Rice Lake Public Schools	2	YES
200. Ripon Public Schools	1	YES
201. ¢River Falls Public Schools	1	YES

202. ¢Seymour Community Schools	1	YES
203. Sparta Area Schools	1	YES
204. Stevens Point Public Schools	3	NO
205. ¢Superior Public Schools	1	YES
206. ¢Thorp Public Schools	1	YES
207. Tigerton Public Schools	1	YES
208. Tomah Public Schools	1	YES
209. ¢Waukesha Public Schools	3	YES
210. ¢Waupun Public Schools	4	YES
211. West Allis Public Schools	1	YES
212. West Bend Public Schools	4	YES
213. West De Pere Public Schools	1	YES
214. Wisconsin Dells Public Schools	1	YES

	Population	Pilot Sample	Study Sample	Total Sample	Sample % of Population
Total Number of School Districts	214	20	146	166	78%
Total Number Of Schools	349	26	180	206	59%

APPENDIX B

ORGANIZATIONAL CHANGE QUESTIONNAIRES

QUESTIONNAIRE ON ORGANIZATIONAL CHANGE

(Unit Teacher Form)

PART I

Directions: Circle the number in the column which most accurately reflects the degree to which you agree or disagree with each of the following statements about the organizational structure of the multiunit school, your school community, and your teaching role. The term "organizational structure" refers to both the unit organization and the Instructional Improvement Committee (IIC) which exist at the school building level. The term "organizational structure of the multiunit school" will be abbreviated MUS-E.

	STRONGLY AGREE			STRONGLY DISAGREE	
1. The organizational structure of the multiunit school (MUS-E) has led to more effective instructional programming in my school.	1	2	3	4	5
2. The principal approves of the MUS-E.	1	2	3	4	5
3. The initial results of the MUS-E were unrewarding in their effect on pupil learning.	1	2	3	4	5
4. The multiunit inservice program was useful in helping me adapt my teaching style to the MUS-E.	1	2	3	4	5
5. When details of the MUS-E were first presented to the faculty, the objectives of the MUS-E were clearly defined.	1	2	3	4	5
6. The MUS-E district coordinator was concerned with what I thought about the MUS-E.	1	2	3	4	5
7. My unit leader spent adequate time with me in helping me adapt to the MUS-E.	1	2	3	4	5
8. The residents of this school community are cosmopolitan.	1	2	3	4	5
9. The principal is informed about what is happening in education.	1	2	3	4	5
10. The unit organization of the multiunit school has led to more children learning the basic skills in my unit.	1	2	3	4	5
11. Teachers in my school approve of the MUS-E.	1	2	3	4	5
12. Residents of this school district are willing to pay for most educational programs.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
13. I receive feedback from my unit leader in regard to my performance in working to set up the unit organization.	1	2	3	4	5
14. It was easy to adapt my teaching style to the unit organization.	1	2	3	4	5
15. Decisions about how to set up the unit organization were made by unit teachers as well as by the unit leader.	1	2	3	4	5
16. The principal supported my efforts to adapt to the MUS-E.	1	2	3	4	5
17. The principal spent adequate time with me in helping me adapt to the MUS-E.	1	2	3	4	5
18. There are many rules and procedures in this school.	1	2	3	4	5
19. I must communicate with the other members of my unit to do my work.	1	2	3	4	5
20. The MUS-E district coordinator provided information about how to adapt to the MUS-E.	1	2	3	4	5
21. The principal values my opinions about the educational policies and programs in this school.	1	2	3	4	5
22. The unit organization is more effective than self-contained classrooms in helping me deal with the individual learning needs and problems of children in my unit.	1	2	3	4	5
23. Residents of this school community are actively involved in school activities.	1	2	3	4	5
24. I receive feedback from the principal in regard to my performance in working to set up the unit organization.	1	2	3	4	5
25. It takes too much time to adapt to the MUS-E.	1	2	3	4	5
26. Sufficient assistance was given to my unit in working to set up the MUS-E.	1	2	3	4	5
27. My unit leader supported my efforts to adapt to the MUS-E.	1	2	3	4	5
28. The MUS-E district coordinator spent adequate time with me in helping me adapt to the MUS-E.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
29. Teachers in my school can influence the educational policies of my school district.	1	2	3	4	5
30. I have little freedom to control the events that influence my work.	1	2	3	4	5
31. I must communicate with my unit leader in order to do my work.	1	2	3	4	5
32. Teachers in my school can influence the educational program in my school.	1	2	3	4	5
33. I can influence the educational policies of this school district.	1	2	3	4	5
34. The MUS-E has helped me become a more effective teacher.	1	2	3	4	5
35. The parents in this school community approve of the multiunit school.	1	2	3	4	5
36. I was allowed little initiative in adapting my teaching style to the unit organization.	1	2	3	4	5
37. Materials and supplies which were necessary for setting up the MUS-E were not supplied on time.	1	2	3	4	5
38. The MUS-E district coordinator supported my efforts to adapt to the MUS-E.	1	2	3	4	5
39. The principal provided me with the necessary kinds of assistance for adapting to the MUS-E.	1	2	3	4	5
40. Unit meetings were scheduled when problems were encountered in setting up the MUS-E.	1	2	3	4	5
41. There are different kinds of jobs for each unit teacher in my unit.	1	2	3	4	5
42. The principal is influential in setting policies in this school district.	1	2	3	4	5
43. I can influence the specific educational program in this school.	1	2	3	4	5
44. The MUS-E has led to more children liking school.	1	2	3	4	5
45. The principles and components of the MUS-E are difficult to understand.	1	2	3	4	5

STRONGLY AGREE — STRONGLY DISAGREE

46. I was adequately involved in helping to set up the MUS-E in my school. 1 2 3 4 5

47. I was not kept well informed on the progress and actions taken by the IIC on setting up the MUS-E. 1 2 3 4 5

48. The principal was concerned with what I thought about the MUS-E. 1 2 3 4 5

49. My unit leader provided me with the necessary kinds of assistance for adapting to the MUS-E. 1 2 3 4 5

50. Unit teachers in my unit teach in a particular subject area. 1 2 3 4 5

51. My principal and unit leader have conflicting expectations for my unit's performance. 1 2 3 4 5

52. The principal is persuasive in staff meetings. 1 2 3 4 5

53. I like to work with the teachers in my unit. 1 2 3 4 5

54. I approve of the MUS-E. 1 2 3 4 5

55. Multiunit orientation workshops helped me to understand the principles and components of the MUS-E. 1 2 3 4 5

56. When details of the MUS-E were first presented to the faculty, research findings about the effects of this structure in other schools were not mentioned. 1 2 3 4 5

57. My unit leader was concerned with what I thought about the MUS-E. 1 2 3 4 5

58. The MUS-E district coordinator provided me with the necessary kinds of assistance for adapting to the MUS-E. 1 2 3 4 5

59. My unit leader holds me accountable for the educational achievement of children in my unit. 1 2 3 4 5

60. In this school district there is an effective local civil government. 1 2 3 4 5

61. The principal is active in professional meetings and conferences outside this school and school district. 1 2 3 4 5

PART II

Directions: Please read the following statements and check those responses which reflect your situation. You may check more than one response for each statement.

1. I am pleased with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

2. Communication among unit teachers in different units focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

3. Teachers in my unit cooperate in:

___ a. exchanging information about teaching procedures
___ b. developing teaching procedures
___ c. selecting teaching procedures
___ d. implementing teaching procedures
___ e. evaluating teaching procedures
___ f. none of the above

4. The MUS-E district coordinator meets with my unit:

___ a. once a week
___ b. once every two weeks
___ c. once a month
___ d. several times a year
___ e. never

5. Communication among unit teachers in my unit focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

6. I have the opportunity to participate in decision making in:

___ a. the development of new unit curricula
___ b. the development of new unit procedures
___ c. the adoption of new unit programs
___ d. the development of new school administrative policies
___ e. the adoption of new school programs
___ f. none of the above

7. Rules and procedures are specified for:

____ a. school district activities
____ b. school activities
____ c. unit activities
____ d. individual teacher activities
____ e. student activities
____ f. none of the above

8. I participate in decision making by:

____ a. exchanging information
____ b. developing solutions to problems
____ c. selecting solutions to problems
____ d. implementing solutions to problems
____ e. evaluating solutions to problems

9. My unit leader meets with me to discuss specific aspects of my job about:

____ a. an hour or more a day
____ b. thirty minutes a day
____ c. fifteen minutes a day
____ d. ten minutes a day
____ e. five minutes or less a day

10. I was adequately involved in setting up the MUS-E in determing:

____ a. the process for setting up the MUS-E
____ b. the objectives of the MUS-E
____ c. solutions to problems encountered in setting up the MUS-E
____ d. the use of curricular materials and work arrangements for my unit
____ e. my role in setting up the MUS-E
____ f. none of the above

11. I am willing to experiment with new:

____ a. curricula
____ b. teaching methods
____ c. unit procedures
____ d. educational goals
____ e. organizational structures
____ f. none of the above

12. The principal meets with my unit:

____ a. more than an hour a week
____ b. an hour a week
____ c. thirty minutes a week
____ d. fifteen minutes a week
____ e. five minutes or less a week

13. My unit leader encourages unit teachers in my unit to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. unit procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

PART III

Directions: Please supply the following information in the space provided.

1. Name of School District:

2. Highest level of formal educational training:

3. Years of teaching experience in this school district:

4. Years of total teaching experience:

5. Five years from now I would like to be (Check off your response.)

___ a. teaching
___ b. a unit leader
___ c. an administrator
___ d. teaching in a college
___ e. working in a field other than education
___ f. other: (Please specify.)

QUESTIONNAIRE ON ORGANIZATIONAL CHANGE

(Unit Leader Form)

PART I

Directions: Circle the number in the column which most accurately reflects the degree to which you agree or disagree with each of the following statements about the organizational structure of the multiunit school, your school community, and your administrative role. The term "organizational structure" refers to both the unit organization and the Instructional Improvement Committee (IIC) which exist at the school building level. The term "organizational structure of the multiunit school" will be abbreviated MUS-E.

	STRONGLY AGREE				STRONGLY DISAGREE
1. The organizational structure of the multiunit school (MUS-E) has led to more effective instructional programming in my school.	1	2	3	4	5
2. The principal approves of the MUS-E.	1	2	3	4	5
3. The initial results of the MUS-E were unrewarding in their effect on pupil learning.	1	2	3	4	5
4. The multiunit inservice program was useful in helping me assist my unit teachers in adapting their teaching styles to the MUS-E.	1	2	3	4	5
5. When details of the MUS-E were first presented to the faculty, the objectives of the MUS-E were clearly defined.	1	2	3	4	5
6. The MUS-E district coordinator was concerned with what I thought about the MUS-E.	1	2	3	4	5
7. The principal spent adequate time with me in helping me assist my unit teachers in adapting to the MUS-E.	1	2	3	4	5
8. The residents of this school community are cosmopolitan.	1	2	3	4	5
9. The principal is informed about what is happening in education.	1	2	3	4	5
10. The unit organization of the multiunit school has led to more children learning the basic skills in my unit.	1	2	3	4	5
11. Teachers in my school approve of the MUS-E.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
12. Residents of this school district are willing to pay for most educational programs.	1	2	3	4	5
13. I receive feedback from the principal in regard to my performance in working to set up the unit organization.	1	2	3	4	5
14. It was easy to adapt my teaching style to the unit organization.	1	2	3	4	5
15. Decisions about how to set up the MUS-E were made by unit leaders as well as by the principal.	1	2	3	4	5
16. The principal supported my efforts to help my unit teachers adapt to the MUS-E.	1	2	3	4	5
17. The MUS-E district coordinator spent adequate time with me in helping me assist my unit teachers in adapting to the MUS-E.	1	2	3	4	5
18. There are many rules and procedures in this school.	1	2	3	4	5
19. I must communicate with the other members of my unit in order to do my work.	1	2	3	4	5
20. The principal values my opinions about the educational policies and programs in this school.	1	2	3	4	5
21. Residents of this school community are actively involved in school activities.	1	2	3	4	5
22. I receive adequate formal release time to plan unit functions.	1	2	3	4	5
23. The unit organization is more effective than self-contained classrooms in helping teachers deal with the individual learning needs and problems of children in my school.	1	2	3	4	5
24. It takes too much time to adapt to the MUS-E.	1	2	3	4	5
25. Sufficient assistance was given to my unit in working to set up the MUS-E.	1	2	3	4	5
26. The MUS-E district coordinator provided information about how to adapt to the MUS-E.	1	2	3	4	5
27. Teachers in my school can influence the educational policies of my school district.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
28. I have little freedom to control the events that influence my work.	1	2	3	4	5
29. I must communicate with the principal in order to do my work.	1	2	3	4	5
30. I can influence the educational policies of this school district.	1	2	3	4	5
31. The MUS-E has helped me to become a more effective teacher and administrator.	1	2	3	4	5
32. The parents in this school community approve of the multiunit school.	1	2	3	4	5
33. I was allowed little initiative in helping teachers in my unit adapt to the unit organization.	1	2	3	4	5
34. Materials and supplies which were necessary for setting up the MUS-E were not supplied on time.	1	2	3	4	5
35. The MUS-E district coordinator supported my efforts to help my unit teachers adapt to the MUS-E.	1	2	3	4	5
36. The principal provided me with the necessary kinds of assistance for helping my unit teachers adapt to the MUS-E.	1	2	3	4	5
37. IIC meetings were scheduled when problems were encountered in setting up the MUS-E.	1	2	3	4	5
38. There are different kinds of jobs for each unit leader in this school.	1	2	3	4	5
39. The principal is influential in setting policies in this school district.	1	2	3	4	5
40. The MUS-E has led to more children liking school.	1	2	3	4	5
41. I can influence the specific educational program in this school.	1	2	3	4	5
42. The principles and components of the MUS-E are difficult to understand.	1	2	3	4	5
43. Teachers in my school can influence the educational program in my school.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
44. I was adequately invovled in helping to set up the MUS-E in my school.	1	2	3	4	5
45. I was not kept well informed on the progress and actions taken by other units in setting up the MUS-E.	1	2	3	4	5
46. The principal was concerned with what I thought about the MUS-E.	1	2	3	4	5
47. Unit teachers in my unit teach in a particular subject area.	1	2	3	4	5
48. Multiunit orientation workshops helped me to understand the principles and components of the MUS-E.	1	2	3	4	5
49. The principal is persuasive in staff meetings.	1	2	3	4	5
50. I approve of the MUS-E.	1	2	3	4	5
51. When details of the MUS-E were first presented to the faculty, research findings about the effects of this structure in other schools were not mentioned.	1	2	3	4	5
52. The MUS-E district coordinator provided me with the necessary kinds of assistance for helping my unit teachers adapt to the MUS-E.	1	2	3	4	5
53. The principal holds me accountable for the educational achievement of children in my unit.	1	2	3	4	5
54. I like to work with the teachers in my unit.	1	2	3	4	5
55. In this school district there is an effective local civil government.	1	2	3	4	5
56. The principal is active in professional meetings and conferences outside this school and school district.	1	2	3	4	5
57. I must communicate with the unit leaders of other units to do my work.	1	2	3	4	5
58. The principal encourages me to work with the MUS-E district coordinator or outside consultants and specialists coming into this school.	1	2	3	4	5

PART II

Directions: Please read the following statements and check those responses which reflect your situation. You may check more than one response for each statement.

1. I am pleased with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

2. Communication among unit leaders focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

3. Unit leaders in my school cooperate in:

___ a. exchanging information about unit procedures
___ b. developing unit procedures
___ c. selecting unit procedures
___ d. implementing unit procedures
___ e. evaluating unit procedures
___ f. none of the above

4. The MUS-E district coordinator meets with the IIC:

___ a. once a week
___ b. once every two weeks
___ c. once a month
___ d. several times a year
___ e. never

5. Communication among members of my unit focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

6. I have the opportunity to participate in decision making in:

___ a. the development of new unit curricula
___ b. the development of new unit procedures
___ c. the adoption of new unit programs
___ d. the development of new school administrative policies
___ e. the adoption of new school programs
___ f. none of the above

7. Rules and procedures are specified for:

____ a. school district activities
____ b. school activities
____ c. unit activities
____ d. individual teaching activities
____ e. student activities
____ f. none of the above

8. I participate in decision making by:

____ a. exchanging information
____ b. developing solutions to problems
____ c. selecting solutions to problems
____ d. implementing solutions to problems
____ e. evaluating solutions to problems

9. The principal meets with me to discuss specific aspects of my job about:

____ a. an hour or more a week
____ b. thirty minutes a week
____ c. fifteen minutes a week
____ d. ten minutes a week
____ e. five minutes or less a week

10. I was adequately involved in setting up the MUS-E in determing:

____ a. the process for setting up the MUS-E
____ b. the objectives of the MUS-E
____ c. solutions to problems encountered in setting up the MUS-E
____ d. the use of curricular materials and work arrangements for my unit
____ e. my role in setting up the MUS-E
____ f. none of the above

11. I am willing to experiment with new:

____ a. curricula
____ b. teaching methods
____ c. unit procedures
____ d. educational goals
____ e. organizational structures
____ f. none of the above

12. The principal meets with the IIC:

____ a. more than an hour a week
____ b. an hour a week
____ c. thirty minutes a week
____ d. fifteen minutes a week
____ e. five minutes or less a week

13. The principal encourages unit leaders to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. unit procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

PART III

Directions: Please supply the following information in the space provided.

1. Name of School District:

2. Highest level of formal educational training:

3. Years of teaching experience in this school district:

4. Years of total teaching experience:

5. Five years from now I would like to be: (Please check off your response.)

___ a. teaching
___ b. a unit leader
___ c. a principal
___ d. a central office administrator
___ e. teaching in a college
___ f. working in a field other than education
___ g. Other: (Please specify.)

QUESTIONNAIRE ON ORGANIZATIONAL CHANGE

(School Principal Form)

PART I

Directions: Please circle the number in the column which most accurately reflects the degree to which you agree or disagree with each of the following statements about the organizational structure of the multiunit school, your school community, and your administrative role. The term "organizational structure" refers to both the unit organization the Instructional Improvement Committee (IIC) which exist at the school building level. The term "organizational structure of the multiunit school" will be abbreviated MUS-E.

		STRONGLY AGREE				STRONGLY DISAGREE
1.	The organizational structure of the multiunit school (MUS-E) has led to more effective instructional programming in my school.	1	2	3	4	5
2.	The initial results of the MUS-E were unrewarding in their effect on pupil learning.	1	2	3	4	5
3.	I receive feedback from the superintendent in regard to my performance in working to set up the MUS-E.	1	2	3	4	5
4.	The multiunit inservice program was useful in helping me set up the MUS-E in my school.	1	2	3	4	5
5.	When details of the MUS-E were first presented to me, the objectives of the MUS-E were clearly defined.	1	2	3	4	5
6.	The MUS-E district coordinator was concerned with what I thought about the MUS-E.	1	2	3	4	5
7.	The school district superintendent spent adequate time with me in helping me to set up the MUS-E.	1	2	3	4	5
8.	The residents of this school community are cosmopolitan	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
9.	The superintendent is informed about what is happening in education.	1	2	3	4	5
10.	The unit organization of the multiunit school has led to more children learning the basic skills in my school.	1	2	3	4	5
11.	Residents of this school district are willing to pay for most educational programs.	1	2	3	4	5
12.	Teachers in my school approve of the MUS-E.	1	2	3	4	5
13.	It was easy to adapt my administrative style to the MUS-E.	1	2	3	4	5
14.	Decisions about how to set up the MUS-E were made by each principal as well as by central office administrators.	1	2	3	4	5
15.	The superintendent supported my efforts to set up the MUS-E.	1	2	3	4	5
16.	The MUS-E district coordinator provided information about how to set up the MUS-E.	1	2	3	4	5
17.	There are many rules and procedures in this school district.	1	2	3	4	5
18.	I must communicate with unit leaders in my school to do my work.	1	2	3	4	5
19.	The unit organization is more effective than self-contained classrooms in helping teachers deal with the individual learning needs and problems of children.	1	2	3	4	5
20.	Residents of this school community are actively involved in school activities.	1	2	3	4	5
21.	The superintendent values my opinions about the educational policies and programs in this school district.	1	2	3	4	5

		STRONGLY AGREE			STRONGLY DISAGREE	
22.	Central office administrators in this school district approve of the MUS-E.	1	2	3	4	5
23.	It takes too much time to adapt to the MUS-E.	1	2	3	4	5
24.	Sufficient assistance was given to my school in working to set up the MUS-E.	1	2	3	4	5
25.	The MUS-E district coordinator supported my efforts to set up the MUS-E.	1	2	3	4	5
26.	The superintendent was concerned with what I thought about the MUS-E.	1	2	3	4	5
27.	I have little freedom to control the events that influence my work.	1	2	3	4	5
28.	I must communicate with central office administrators in order to do my work.	1	2	3	4	5
29.	I can influence the educational policies of this school district.	1	2	3	4	5
30.	The MUS-E has helped me to become a more effective instructional leader of my school.	1	2	3	4	5
31.	The parents in this school community approve of the multiunit school.	1	2	3	4	5
32.	I was allowed little initiative in setting up the MUS-E.	1	2	3	4	5
33.	Materials and supplies which were necessary for setting up the MUS-E were not supplied on time.	1	2	3	4	5
34.	The superintendent provided me with the necessary kinds of assistance for setting up the MUS-E.	1	2	3	4	5
35.	District multiunit meetings were scheduled when problems were encountered in setting up the MUS-E.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
36.	There are different kinds of jobs for each principal in this school district.	1	2	3	4	5
37.	The superintendent is influential in setting policies in this school district.	1	2	3	4	5
38.	The MUS-E has led to more children liking school.	1	2	3	4	5
39.	The principles and components of the MUS-E are difficult to understand.	1	2	3	4	5
40.	I was adequately involved in helping to set up the MUS-E in my school.	1	2	3	4	5
41.	I was not kept well informed on the progress and actions taken by the central office in setting up the MUS-E in this school district.	1	2	3	4	5
42.	The MUS-E district coordinator spent adequate time with me in helping me to set up the MUS-E.	1	2	3	4	5
43.	The superintendent and school board have conflicting expectations for my school's performance.	1	2	3	4	5
44.	Sufficient funds have been made available to me for setting up the MUS-E in my school.	1	2	3	4	5
45.	The superintendent is persuasive in school district administrative meetings.	1	2	3	4	5
46.	I approve of the MUS-E.	1	2	3	4	5
47.	I like to work with other principals in this school district.	1	2	3	4	5
48.	Multiunit orientation workshops helped me to understand the principles and components of the MUS-E.	1	2	3	4	5
49.	When details of the MUS-E were first presented to me, research findings about the effects of this structure in other schools were not mentioned.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
50.	The MUS-E district coordinator provided me with the necessary kinds of assistance for setting up the MUS-E.	1	2	3	4	5
51.	The superintendent approves of the MUS-E.	1	2	3	4	5
52.	The superintendent encourages me to work with outside MUS-E consultants or specialists.	1	2	3	4	5
53.	The superintendent holds me accountable for the educational achievement of children in my school.	1	2	3	4	5
54.	In this school district there is an effective local civil government.	1	2	3	4	5
55.	The superintendent is active in professional meetings and conferences outside this school district.	1	2	3	4	5

PART II

Directions: Please read the following statements and check those responses which reflect your situation. You may check more than one response for each statement.

1. I am pleased with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

2. Communication between central office administrators and myself focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

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3. Teachers in my school cooperate in:

___ a. exchanging information about teaching procedures
___ b. developing teaching procedures
___ c. selecting teaching procedures
___ d. implementing teaching procedures
___ e. evaluating teaching procedures
___ f. none of the above

4. The MUS-E district coordinator meets with me:

___ a. once a week
___ b. once every two weeks
___ c. once a month
___ d. several times a year
___ e. never

5. I cooperate with central office administrators in:

___ a. exchanging information about school district programs
___ b. developing school district programs
___ c. selecting school district programs
___ d. implementing school district programs
___ e evaluating school district programs
___ f. none of the above

6. In this school district, I have the opportunity to participate in decision making in:

___ a. the development of new school curricula
___ b. the development of new school procedures
___ c. the adoption of new school programs
___ d. the development of new school district policies
___ e. the adoption of new school district programs
___ f. none of the above

7. Rules and procedures are specified for:

___ a. school district activities
___ b. school activities
___ c. unit activities
___ d. individual teaching activities
___ e. student activities
___ f. none of the above

8. In this school district, I participate in decision making by:

___ a. exchanging information
___ b. developing solutions to problems
___ c. selecting solutions to problems
___ d. implementing solutions to problems
___ e. evaluating solutions to problems

9. I talk with the superintendent about specific aspects of my job about:

___ a. an hour or more a week
___ b. thirty minutes a week
___ c. fifteen minutes a week
___ d. ten minutes a week
___ e. five minutes or less a week

10. I was adequately involved in setting up the MUS-E in determining:

___ a. the process for setting up the MUS-E
___ b. the objectives of the MUS-E
___ c. solutions to problems encountered in setting up the MUS-E
___ d. the use of curricular materials and work arrangements for my school
___ e. my role in setting up the MUS-E
___ f. none of the above

11. I am willing to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

12. The superintendent encourages principals to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

13. In this school, I have the services of the following professionals for at least one day a month.

    ___ a. a school psychologist
    ___ b. a multiunit consultant or specialist
    ___ c. an elementary curriculum specialist
    ___ d. a testing specialist
    ___ e. a clinical psychologist
    ___ f. none of the above

14. In this school, I have the services of the following professionals for at least one day a week.

    ___ a. a school nurse
    ___ b. a home-school coordinator
    ___ c. a reading specialist
    ___ d. a special education teacher
    ___ e. an assistant principal
    ___ f. none of the above

PART III

Directions: Please supply the following information in the space provided.

1. Name of School District:

2. Highest level of formal educational training:

3. Years of teaching experience in this school district:

4. Years of total teaching experience:

5. Years of administrative experience in this school district:

6. Years of total administrative experience:

7. Five years from now, I would like to be: (Please check off your response.)

    ___ a. a principal
    ___ b. a central office administrator
    ___ c. a superintendent
    ___ d. teaching in a college
    ___ e. working in a field other than education
    ___ f. Other: (Please specify)

QUESTIONNAIRE ON ORGANIZATIONAL CHANGE

(District Coordinator Form)

PART I

Directions: Please circle the number in the column which most accurately reflects the degree to which you agree or disagree with each of the following statements about the organizational structure of the multiunit school or schools in your school district, your school district community, and your administrative role. The term "organizational structure" refers to both the unit organization and the Instructional Improvement Committee (IIC) which exist at the school building level. The term "organizational structure of the multiunit school" will be abbreviated MUS-E.

	STRONGLY AGREE			STRONGLY DISAGREE	
1. The organizational structure of the multiunit school or schools (MUS-E) in my school district has led to more effective instructional programming.	1	2	3	4	5
2. The superintendent approves of the MUS-E.	1	2	3	4	5
3. The initial results of the MUS-E were unrewarding in their effect on pupil learning.	1	2	3	4	5
4. I receive feedback from the superintendent in regard to my performance in working to set up the MUS-E in school(s) in this school district.	1	2	3	4	5
5. Residents of this school district are willing to pay for most educational programs.	1	2	3	4	5
6. The multiunit inservice program was useful in helping principals and teachers set up the MUS-E.	1	2	3	4	5
7. When details of the MUS-E were first presented to the school district staff, the objectives of the MUS-E were clearly defined.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
8.	The superintendent was concerned with what I thought about the MUS-E.	1	2	3	4	5
9.	Residents of this school district are actively involved in school district activities.	1	2	3	4	5
10.	School district administrative meetings are scheduled often enough to deal with problems which occur in this school district.	1	2	3	4	5
11.	The superintendent is informed about what is happening in education.	1	2	3	4	5
12.	The unit organization of the multiunit school has led to more children learning the basic skills.	1	2	3	4	5
13.	The residents of this school district are cosmopolitan.	1	2	3	4	5
14.	The personnel in this school district approve of the MUS-E.	1	2	3	4	5
15.	It was easy for schools to adapt to the MUS-E.	1	2	3	4	5
16.	Decisions about how to set up the MUS-E in schools in this school district were made by me as well as by the superintendent.	1	2	3	4	5
17.	The adoption of the MUS-E in this school district has presented collective bargaining problems with the local teacher association.	1	2	3	4	5
18.	The superintendent has supported my efforts to help principals and teachers adapt to the MUS-E.	1	2	3	4	5
19.	There are many rules and procedures in this school district.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
20.	I must communicate with other members of the central office staff to do my work.	1	2	3	4	5
21.	The superintendent values my opinions about the educational policies and programs in this school district.	1	2	3	4	5
22.	The unit organization is more effective than self-contained classrooms in helping teachers deal with the individual learning needs and problems of children.	1	2	3	4	5
23.	The residents of this school district approve of the multi-unit school.	1	2	3	4	5
24.	It takes too much time to adapt to the MUS-E.	1	2	3	4	5
25.	Sufficient assistance was given to those schools in this school district working to set up the MUS-E.	1	2	3	4	5
26.	The superintendent provided me with information about how to help schools set up the MUS-E.	1	2	3	4	5
27.	I have little freedom to control the events that influence my work.	1	2	3	4	5
28.	I must communicate with the superintendent in order to do my work.	1	2	3	4	5
29.	I can influence the educational policies of the school district.	1	2	3	4	5
30.	The MUS-E has helped teachers to become more effective teachers.	1	2	3	4	5
31.	I was allowed little initiative in helping schools in this school district set up the MUS-E.	1	2	3	4	5
32.	The superintendent provided me with the necessary kinds of assistance for helping schools set up the MUS-E.	1	2	3	4	5
33.	I approve of the MUS-E.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
34.	District MUS-E meetings were scheduled when district problems were encountered in setting up the MUS-E.	1	2	3	4	5
35.	The MUS-E has helped administrators to become more effective administrators.	1	2	3	4	5
36.	The superintendent is influential in setting policies in this school district.	1	2	3	4	5
37.	The MUS-E has led to more children liking school.	1	2	3	4	5
38.	I can influence the specific educational program of schools in which I work.	1	2	3	4	5
39.	The principles and components of the MUS-E are difficult to understand.	1	2	3	4	5
40.	I was adequately involved in setting up the MUS-E in schools in this school district.	1	2	3	4	5
41.	I was not kept well informed on the progress and actions taken by those schools in this school district which were setting up the MUS-E.	1	2	3	4	5
42.	The superintendent spent adequate time with me in helping me to assist schools which were setting up the MUS-E.	1	2	3	4	5
43.	The superintendent encourages me to work with outside multiunit consultants or specialists coming into the school district.	1	2	3	4	5
44.	Sufficient funds have been made available to those schools in this school district which are setting up the MUS-E.	1	2	3	4	5

	STRONGLY AGREE				STRONGLY DISAGREE
45. The superintendent and school board have conflicting expectations for the performance of multiunit schools in this school district.	1	2	3	4	5
46. I like to work with principals in the multiunit schools in this school district.	1	2	3	4	5
47. The superintendent is persuasive in district staff meetings.	1	2	3	4	5
48. Multiunit orientation workshops helped me to understand the principles and components of the MUS-E.	1	2	3	4	5
49. When details of the MUS-E were first presented to the school district staff, research findings about the effects of this structure in other schools were not mentioned.	1	2	3	4	5
50. The superintendent holds me accountable for the educational achievement of children in this school district.	1	2	3	4	5
51. In this school district there is an effective local civil government.	1	2	3	4	5
52. The superintendent is active in professional meetings and conferences outside this school district.	1	2	3	4	5
53. I must communicate with school principals to do my work.	1	2	3	4	5

PART II

Directions: Please read the following statements and check those responses which reflect your situation. You may check more than one response for each statement.

1. I am pleased with new:

___ a. curricula
___ b. teaching methods

___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

2. Communication between central office staff and principals focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

3. Central office staff and principals cooperate in:

___ a. exchanging information about school programs
___ b. developing school programs
___ c. selecting school programs
___ d. implementing school programs
___ e. evaluating school programs
___ f. none of the above

4. Communication between central office staff and the superintendent focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

5. In this school district I have the opportunity to participate in decision making in:

___ a. the development of new curricula
___ b. the development of new school procedures
___ c. the adoption of new school programs
___ d. the development of new school district programs
___ e. the adoption of new school district programs
___ f. none of the above

6. Rules and procedures are specified for:

___ a. school district activities
___ b. school activities
___ c. unit activities
___ d. individual teacher activities

___ e. student activities
___ f. none of the above

7. In this school district I participate in decision making by:

___ a. exchanging information
___ b. developing solutions to problems
___ c. selecting solutions to problems
___ d. implementing solutions to problems
___ e. evaluating solutions to problems

8. The superintendent meets with me to discuss specific aspects of my job about:

___ a. an hour a week or more
___ b. thirty minutes a week
___ c. fifteen minutes a week
___ d. ten minutes a week
___ e. five minutes or less a week

9. I was adequately involved in setting up the MUS-E in determining:

___ a. the process for setting up the MUS-E
___ b. the objectives for the MUS-E
___ c. solutions to problems encountered in setting up the MUS-E
___ d. the use of curricular materials and work arrangements for the MUS-E schools
___ e. my role in setting up the MUS-E
___ f. none of the above

10. I am willing to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

11. The superintendent encourages central office staff members to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures

___ d. educational goals
___ e. organizational structures
___ f. none of the above

12. In this school district, we have the services of the following full-time professionals:

___ a. testing specialists
___ b. research and development specialists
___ c. subject specialists
___ d. subject supervisors
___ e. home-school coordinators
___ f. AV specialists

13. In this school district, we have the services of the following full-time professionals:

___ a. social workers
___ b. medical specialists
___ c. school psychologists
___ d. guidance counselors
___ e. multiunit consultants
___ f. clinical psychologists

PART III

Directions: Please supply the following information in the space provided.

1. Name of school district:
2. Highest level of formal educational training:
3. Years of teaching experience in this school district:
4. Years of total teaching experience:
5. Years of administrative experience in this school district:
6. Years of total administrative experience:
7. Five years from now I would like to be: (Check off your response.)

___ a. a principal
___ b. a central office administrator
___ c. a superintendent
___ d. teaching in a college
___ e. working in a field other than education
___ f. Other: (Please specify.)

QUESTIONNAIRE ON ORGANIZATIONAL CHANGE

(Superintendent Form)

PART I

Directions: Please circle the number in the column which most accurately reflects the degree to which you agree or disagree with each of the following statements about the organizational structure of the multiunit school or schools in your school district, your school district community, and your administrative role. The term "organizational structure" refers to both the unit organization and the Instructional Improvement Committee (IIC) which exist at the school building level. The term "organizational structure of the multiunit school" will be abbreviated MUS-E.

STRONGLY AGREE — STRONGLY DISAGREE

1. The organizational structure of the multiunit school (MUS-E) has led to more effective instructional programming. 1 2 3 4 5
2. The school board members approve of the MUS-E. 1 2 3 4 5
3. Residents of this school district are willing to pay for most educational programs. 1 2 3 4 5
4. The initial results of the MUS-E were unrewarding in their effect on pupil learning. 1 2 3 4 5
5. The multiunit inservice program was useful in helping schools set up the MUS-E. 1 2 3 4 5
6. When details of the MUS-E were first presented to me, the objectives of the MUS-E were clearly defined. 1 2 3 4 5
7. The residents of this school district are cosmopolitan. 1 2 3 4 5

		STRONGLY AGREE			STRONGLY DISAGREE	
8.	The unit organization of the multiunit school has led to more children learning the basic skills.	1	2	3	4	5
9.	The adoption of MUS-E in this school district has presented collective bargaining problems with the local teacher association.	1	2	3	4	5
10.	Residents of this school district are actively involved in school district activities.	1	2	3	4	5
11.	The personnel in this school district approve of the MUS-E.	1	2	3	4	5
12.	It was easy for schools in this school district to set up the MUS-E.	1	2	3	4	5
13.	There are many rules and procedures in this school district.	1	2	3	4	5
14.	I must communicate with members of my staff to do my work.	1	2	3	4	5
15.	The unit organization is more effective than self-contained classrooms in helping teachers deal with the individual learning needs and problems of children.	1	2	3	4	5
16.	The residents of this school district approve of the multiunit school.	1	2	3	4	5
17.	It takes too much time for schools to set up the MUS-E.	1	2	3	4	5
18.	Sufficient assistance was given to schools in this school district which were setting up the MUS-E.	1	2	3	4	5
19.	I have little freedom to control the events that influence my work.	1	2	3	4	5
20.	I must communicate with the school board members to do my work.	1	2	3	4	5

		STRONGLY AGREE				STRONGLY DISAGREE
21.	The MUS-E has helped teachers become more effective teachers.	1	2	3	4	5
22.	I approve of the MUS-E.	1	2	3	4	5
23.	I was allowed little initiative in helping schools set up the MUS-E.	1	2	3	4	5
24.	The MUS-E has led to more children liking school.	1	2	3	4	5
25.	The principles and components of the MUS-E are difficult to understand.	1	2	3	4	5
26.	The MUS-E has helped principals become more effective administrators.	1	2	3	4	5
27.	I was adequately involved in helping to set up the MUS-E in schools in my school district.	1	2	3	4	5
28.	I was not kept well informed on the progress and actions taken by those schools in this school district working to set up the MUS-E.	1	2	3	4	5
29.	The residents of this school district and members of the school board have conflicting expectations for the performance of a multiunit school.	1	2	3	4	5
30.	When details of the MUS-E were first presented to me, research findings about the effects of this structure in other schools were not mentioned.	1	2	3	4	5
31.	Sufficient funds have been made available to those schools in my school district which are setting up the MUS-E.	1	2	3	4	5
32.	The school board holds me accountable for the educational achievement of children in this school district.	1	2	3	4	5
33.	In this school district, there is an effective local civil government.	1	2	3	4	5
34.	I must communicate with school principals to do my work.	1	2	3	4	5

PART II

Directions: Please read the following statements and check those responses which reflect your situation. You may check more than one response for each statement.

1. I am pleased with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

2. Communication between the district staff and myself focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

3. My district staff and I cooperate in:

___ a. exchanging information about school district policies
___ b. developing school district policies
___ c. selecting school district policies
___ d. implementing school district policies
___ e. evaluating school district policies
___ f. none of the above

4. Communication between the school board and myself focuses on:

___ a. concealing information
___ b. exchanging information
___ c. sharing problems
___ d. generating solutions to problems
___ e. solving problems

5. Rules and procedures are specified for:

___ a. school district activities
___ b. school activities
___ c. unit activities
___ d. individual teacher activities
___ e. student activities
___ f. none of the above

6. I talk with school board members about:

___ a. an hour or more a week
___ b. thirty minutes a week
___ c. fifteen minutes a week
___ d. ten minutes a week
___ e. five minutes or less a week

7. I am willing to experiment with new:

___ a. curricula
___ b. teaching methods
___ c. school procedures
___ d. educational goals
___ e. organizational structures
___ f. none of the above

8. In this school district, we have the services of the following full-time professionals:

___ a. testing specialists
___ b. research and development specialists
___ c. subject supervisors
___ d. subject specialists
___ e. home-school coordinators
___ f. AV specialists

9. In this school district, we have the services of the following full-time professionals:

___ a. social workers
___ b. medical specialists
___ c. school psychologists
___ d. guidance counselors
___ e. multiunit consultants
___ f. clinical psychologists

PART III

Directions: Please supply the following information in the space provided.

1. Name of school district:
2. Highest level of formal educational training:
3. Years of teaching experience in this school district:
4. Years of total teaching experience:
5. Years of administrative experience in this school district:
6. Years of total administrative experience:
7. Five years from now I would like to be: (Check off your response.)

   ___ a. superintendent
   ___ b. teaching in a college
   ___ c. an administrator in a college
   ___ d. working in a field other than education
   ___ e. Other: (Please specify.)

APPENDIX M

IMPLICATIONS FOR THE INSTITUTIONALIZATION OF PLANNED CHANGE PROGRAMS

In earlier sections of this study, implications from the findings were drawn for application to the institutionlization of MUS-E, to change literature, and to areas of needed further research. However, since the initial readers of this study thought that more could be said about the nature of institutionalization in general, additional guidelines for the institutionalization of educational changes in particular and planned changes in general will be presented in this section. The guidelines which are presented do not necessarily reflect the nature of the specific findings, rather they represent the researcher's own inferences and abstractions from the findings.

Before the guidelines are presented, a framework needs to be provided for viewing change in educational organizations as compared to change in non-educational organizations. Although this framework is valuable for orientation to educational change, it is by no means absolute in its separation of organizations. In fact, for change programs to be successfully institutionalized, it is more important to view the unique situation in each organization rather than view the situation from an a priori framework.

In general, there are four basic characteristics unique to educational and other service organizations. Each of these characteristics affects the change effort.

The first unique characteristic of educational organizations is that there is less specialization and differentiation between individuals in educational organizations than in other organizations. In these former organizations, there are three major groups (teachers, principals and superintendents, and supportive staff members), while in other organizations there are usually more varied groups of specialists, technical experts, and middle managers. Since there are fewer functional groups in education and since these groups assume roles as "generalists" in the process of education, when any change is made in the organizational procedures and program, most of the individuals in the organization are subsequently affected. (This is unlike other organizations, where most changes affect fewer individuals in the organization at any one time.) For this reason, individuals in educational organization may have to be involved in more of the changes than individuals in more differentiated and specialized organizations. To deal with this, organizational development in schools and school districts needs to focus on the development of a change environment for the entire organization, rather than for departments or components within the organization. The

OD effort in educational organizations will generally require more effort, investment in time and resources, and individual involvement than OD in other organizations.

The second unique characteristic of educational organizations is that there is less formalization and specification of prescribed standard behavior in educational organizations than in other organizations. Unlike other organizations where tasks are more defined and performance is more prescribed, tasks and performance in educational organizations are not easily described or measured and individual teachers are still autonomous within their classroom. Although there is justification for assuming that (because of this) there is less rigidity and less observance of standard operating procedures in educational organizations than in other organizations; actually, this is not the case. There is probably more rigidity and more observance of traditional practices in educational organizations than in other organizations because individuals in the former organizations need security in their roles and self developed role practices are more restrictive than organizationally developed practices when organizations undergo change. For this reason, when changes are made in educational organizations, more attention needs to be given to the encouragement and support of individuals working with the change than is needed with individuals in other organizations.

The third unique characteristic of educational organizations is that there is less centralization of decision-making in educational organizations than in other organizations. Since individuals (teachers) in educational organizations (unlike individuals in other organizations) make most of their own decisions about their roles; changes in educational organizations need to automatically involve the individual in the decision-making process in order to gain initial acceptance and later institutionalization of the change. This does not always have to be the case in other organizations where individuals are not involved in making their own decisions about their roles.

The fourth unique characteristic of educational organizations is that there is usually less agreement on specific goals and objectives of the organization than in other organizations. Since many divergent groups (teachers, administrators, students, parents, society, etc.) both inside and outside the organization comprise the educational community, demands and counter-demands for differing objectives are common. For this reason (and unlike other organizations where demands for differing goals are more easily dealt with), time has to be set aside for inter-group and intra-group meetings within the organizational community to gain consensus and/or greater definition of the goals of the organization before changes can be introduced into educational organizations. When this is attained, change programs can be developed in relation to these newly described goals. Since other organizations usually have defined goals before changes are introduced, less time has to be spent in developing the appropriate environment for change.

Having viewed the unique situation in educational organizations, it is now possible to set up guidelines common to the institutionalization of change in all organizations. For simplicity, the referent points used in the guidelines will relate to individuals as users and administrators of the change, support personnel involved in the change process, and agents of change. Users, administrators, support personnel, and agents of change exist in all organizations.

In general, there are certain types of organizations where change is more likely to be undertaken. First, since the original decision to adopt change is made by only a few individuals in the higher echelon of an organization, organizations headed by individuals who are influential opinion leaders and/or aware of and influenced by the current advances in their field are more likely to undertake a change than organizations without these individuals. Second, organizations which are composed of cosmopolitan individuals (or influenced by the same as in cosmopolitan communities affecting educational organizations), have slack or available resources, and have an organizational hierarchy where communication channels are open and used are more likely to undertake changes than organizations without these characteristics.

When the decision to adopt has been made, information about the change has to be presented to the organizational members. This is probably the singly most important part of the institutionalization process, since orientation to the change program leads to an individual's initial acceptance or rejection of the change. To set up an "adequate" orientation environment (to assure the positive acceptance of the change), six steps need to be followed. First, time needs to be set aside for the proper introduction of the change. Formal orientation workshops, organizational meetings, and in-service seminars need to be planned for and organized for the orientation phase and afterwards. Second, the change needs to be packaged and presented so that it is easily understood, easily referenced and related to performance results in other similar organizations, and easily seen as possessing specific operational objectives. If this is done properly, the relative advantage of the change program (the single most important attribute of a change's acceptance) can be visible. Third, the supportive services and resources available to the institutionalization effort need to be identified, obtained, and confirmed so that users of the change will see that their efforts in the change process will be supported. Fourth, the requirements for each individual in the institutionalization process and the change in each individual's role after the change is institutionalized have to be described. These last two steps relate to the second most important attribute affecting the acceptance of a change - whether the individual perceives that it will be realistically easy to institutionalize the change program and relatively unthreatening to his role afterwards. Fifth, the acceptance and support of the users' immediate supervisors for the change program and change process need to be acknowledged and proclaimed so that the users of the change will be inclined to undertake the change effort (since their supervisor seems to be interested in their doing so). Sixth, the specific roles and relationships of the users, administrators, support personnel, and agents of change need to be clearly and specifically described for each individual likely to be involved in the change program and change process. If this happens, each individual will know what to expect in the process of institutionalization, what he will be accountable for in the change program, and how he is to relate to others during and after the change activity. At this time, formal mechanisms need to be set up so that users (through in-service programs) and the others (through continuing training programs) can assume their new required roles more effectively.

After the change is introduced into the organization, five support steps need to be followed. First, the supportive services need to be produced and made readily available to supplement the efforts of the users' to adapt to the change. This step is more important in the initial phases of the institutionalization process since in this phase personal investiture and identification with the change may be less internalized. In later phases of the process, the individual can accept more responsibility and less support for the change effort, since he is likely to be more committed to the change program. Second, the administrators must make sure that the organization's communication channels are freely and frequently used so that information about the change process is transferred throughout the organization. Particularly important is communication at the level of users involved in the process of change. Feedback, also, is important at the level of the administrator who is indirectly involved in the change activity. In order for the communication channels to be used effectively, administrators need to provide rewards (encouragement, example setting, verbal praise, and publicity) for their use. If information channels are used, individuals can have adequate information to deal with problems in the institutionalization of the change program when they occur, not after they have become dysfunctional to the organization. Third, rules and standard operating procedures need to be relaxed within the particular segment (department, unit, school) undergoing the change process so that creative and varied approaches and experiments with the change program are promoted. At the same time, rules and standard operating procedures need to be maintained at the support level of the organization, since they are less directly involved with the change process and still need to provide continued change support. Fourth, the roles assumed by the agents of change have to be integrated and their contact with the users of the change have to be frequent and individualized. This is possible if the varied agents of change (technical consultant, process consultant, organizational researcher, and administrator) are properly selected initially and adequately trained to develop and use a repertoire of responses to unique events, problems, and individual respondent types. Training modules related to problem solving techniques, human relations, and personal behavior modes can be used in the training of the agents. Problems likely to be encountered in the institutionalization effort needs to be catalogued by the support group in the organization and the agents should have formally defined times for getting together (as a team) to deal with solutions to these problems. Teams of agents will be potentially more effective in dealing with problems than individual agents since teams are less threatening and more influential in convincing individual users and administrators to work with the change program. Fifth, the individual user has to "feel" that he is adequately involved in the change process so that he/she is inwardly encouraged to make the extra effort required in the change process. For this to happen, in-service meetings and programs have to be formally established throughout the process of change. Throughout the change effort, the top administrators, support personnel, and agents of change have to be kept informed of the demands of the change program and the middle administrators and users need to be directly involved in decision-making and policy-making about the change process and change program.

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